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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

OF THE

PROVINCE OF ALBERTA

FOR THE YEAR

1959

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON, ALBERTA
Printed by L. S. WALL, Queen's Printer for Alberta
1960

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To His Honour,
J. PERCY PAGE,
Lieutenant Governor of the Province of Alberta.

Sir:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1959.

I have the honour to be, Sir,

Your obedient servant,
L. C. HALMRAST,
Minister of Agriculture

DEPARTMENT OF AGRICULTURE
1959

HON. L. C. HALMRAST, Minister of Agriculture
R. M. PUTNAM, Deputy Minister of Agriculture

HEADS OF BRANCHES

A. M. Wilson, Field Crops Commissioner
W. H. T. Mead, Live Stock Commissioner
D. H. McCallum, Dairy Commissioner
R. H. McMillan, Poultry Commissioner
R. W. Gillies, Fur Farm Supervisor
F. L. Grindley, Director of Water Resources
S. S. Graham, Director, Extension Service
E. E. Ballantyne, V.S., D.V.M., Director, Veterinary Services
J. E. Hawker, Superintendent, Schools of Agriculture and Home Economics
C. L. Usher, Supervisor, 4-H Clubs
E. B. Swindlehurst, Supervisor, Radio and Information Branch
H. W. Gaebel, Secretary-Accountant
G. R. Sterling, Chairman, Land Conservation and Utilization Committee
Lieut.-Col. Arnold J. Lavoie, Provincial Co-ordinator, Alberta Civil Defence

Report of the Deputy Minister

(R. M. Putnam)

The Honourable L. C. Halmrast,
Minister of Agriculture.

Sir:

I have the honour to submit the Annual Report of the Alberta Department of Agriculture for the year ending December 31st, 1959.

Production of crops in 1959 was about 10% above that of 1958. The crop season was marked by variable conditions in the spring which improved through June. By the end of June moisture conditions were generally good, with the exception of the east-central portion of the province. Rain relieved conditions about the end of July, but not in time to save the grain crops in the east-central part of Alberta.

A wet harvest in the central and northern part of the province delayed harvest. This spell of wet weather culminated in a snow storm about October 10th, which ended harvesting operations in some areas. Between this date and Christmas farmers continued to thresh as conditions permitted, but when winter finally closed in, a large acreage of crops from about Township 32 north remained in the fields.

The principal feature of the live stock industry was the increase in swine marketings, which reached about 2,300,000 head—at total almost equal to the record production of 1944. Cattle prices were somewhat above those of 1958. Hog prices underwent a change on October 1st, when the floor price was reduced from $25.00 to $23.65, basis Grade A Toronto, and the Government of Canada announced that on January 11th, 1960, the floor price policy would be replaced by a deficiency payment plan.

The production of milk was almost equivalent to that of 1958.

Changes in the marketing of eggs occurred on October 1st, when the floor price policy was supplanted by a deficiency payment plan.

Several additional events of significance to the industry occurred during the year. To assist farmers whose crops of hay could not be harvested the railways, Government of Canada and Government of Alberta agreed to pay freight costs up to a maximum of $12.00 per ton. The Government of Canada also agreed to share with Alberta, trucking charges on fodder moving into the designated area. This assistance amounted to five cents per ton mile with a maximum payment of $10.00 per ton.

Another joint policy was established to assist farmers who were unable to thresh their crops due to the early snow. Under this Federal-Provincial Emergency Unthreshed Grain Assistance Policy Canada agreed to share with the Province on a 50-50 basis the cost of providing emergency assistance to farmers who had been unable to harvest 50% of their 1959 crop. This payment was limited to a maximum of 200 acres of unthreshed crop. As the year ended details for the administration of the policy were being worked out.

The Government of Canada enacted legislation to establish the Farmer Credit Corporation that replaced the Canadian Farm Loan Board and an Act was passed to provide Federal assistance to Crop Insurance Programs.

During the 1959 session of the Alberta Legislature the Farm Home Improvement Act was passed to provide loans to farmers to improve their farm homes. The Act authorized loans up to $2,000.00 at five per cent interest and guaranteed banks and treasury houses against 50% of any loss.

During 1959 the Department published the Alberta Farm Guide. This publication was financed jointly by the Canada and Alberta Departments of Agriculture. The contents were contributed by the staffs of the Canada Department of Agriculture, University of Alberta and Alberta Department of Agriculture. A Beef Cattle Performance Testing Program was initiated in 1959; the 4-H Club Crop Projects were replaced by programs which included the principle of progression; and the guarantee to Feeder Associations was increased from $100,000 to $200,000.

Daniel J. Morkeberg, of Markerville, was named to the Agricultural Hall of Fame and admitted during a ceremony in February.

Alberta's winnings at the Royal Winter Fair were not as numerous as last year, but Alberta exhibitors captured the World Championship in Wheat and the Grand Championship in the Market Cattle Classes.

As recommended by the Irrigation Study Committee an Irrigation Planning Board was established in December. No meetings of the Board were held before the end of the year.

I wish to record a number of staff changes. After 36 years in the employ of the Alberta Department of Agriculture, F. H. Newcombe, Director of Extension, retired on superannuation on October 27th. This vacancy was filled by the appointment of S. S. Graham, Assistant Director of Extension. On December 31st Air Vice Marshal G. R. Howsam, Co-ordinator of Civil Defence resigned. The position was filled by the promotion of Col. A. L. Lavoie, Deputy Co-ordinator. R. C. Moffat, District Agriculturist at Grande Prairie, was named to the new position of Farm Credit Administrator. C. S. Brandley, of Lethbridge, was appointed to the post of Department Solicitor.

It is with regret that I record the untimely death of W. N. Pidruchney, District Agriculturist at Vegreville, who passed away suddenly late in November after 34 years of continuous service with the Department.

The number of staff members on December 31st totalled 478 of whom 192 were classed as technical personnel.

Reports on the activities of the various branches of the Department are given in detail in the following pages.

I wish to record my appreciation for your counsel during the year and to express my sincere thanks to each and every member of the staff for his loyal co-operation and devotion to duty through the year. I also extend the appreciation and thanks of the Department to those many individuals and organizations who have assisted in carrying forward the programs of the Department.

Respectfully submitted,

R. M. PUTNAM,
Deputy Minister

Report of the Field Crops Branch

A. M. WILSON, Commissioner

O. G. Bratvold, Crop Improvement
W. Lobay, Soils and Weed Control
J. B. Gurba, Crop Protection and Pest Control
P. D. McCalla, Horticulture
P. R. Hargrave, Superintendent, Horticulture Station, Brooks
J. W. Edmunds, Apiculture

REPORT OF THE FIELD CROPS COMMISSIONER

A. M. Wilson

The area of principal grain crops increased by 284,000 acres. Wheat was up more than 450 thousand acres, oats by 40 thousand and flax by 25 thousand. The barley acreage, which has for several years consistently increased, dropped by 236 thousand while rye crops remained practically the same.

In minor crops rape seed acreage decreased from 70 thousand to 30 thousand, durum wheat from 72 to 39 thousand and mustard seed from 87 to 80 thousand. In some areas of the province there was a notable increase of mixed grains. These consisted of wheat, oats and barley grown together for livestock feed.

Crop land was dry in the spring and could have been seeded early but due to poor growing conditions because of lack of moisture and cool weather many farmers delayed their seeding operations until early May. On spring tilled land other than summerfallow germination was uneven, and crop growth patchy.

Snow cover was light throughout the winter and there was little run off in most areas. Farmers and ranchers were concerned with dry surface conditions, a minimum of subsoil moisture, and the drying up of sloughs and other water reservoirs in summer pastures.

Near drought conditions prevailed in eastern Municipalities from Medicine Hat to Vermilion, while throughout central Alberta June rains produced a near bumper crop. In the Peace River Block crops were light north of the Peace River but on the south side better than average yields were harvested.

Very adverse weather prevailed in central and northern areas during the harvest season. Swathing and combining were continually delayed by light showers or heavy rains. By early October although the greater part of the crop had been threshed in southern Alberta and in the Peace River area over half the crop remained in the field at most central Alberta points. On October 7th and 8th heavy rain and snow covered all unharvested crops. Throughout the area from Ponoka through Camrose, Daysland, Holden and Ryley over twelve inches of snow fell on land previously soaked with rain. Even heavier snow covered the Minburn, Vermilion, Lloydminster and Wainwright districts. In most other central and northern parts the snow cover varied from four to ten inches. Warm weather followed, all snow disappeared but swaths remained soaked and in many fields, particularly around Camrose, the operation of farm machinery was impossible.

Many farmers faced with the prospect of being short of feed grains threshed crops in tough and damp conditions. It appeared to many farmers that they could have continued with combining if grain could be dried. Consequently there was great interest in crop driers, and many more than ever before were purchased with the hope that remaining crops could be taken off. However, generally unsatisfactory harvesting weather prevailed after the heavy snow and although farmers combined periodically to take off considerably more crop it was for the most part too wet to be dried to a satisfactory grade.

Due to the lack of farm income because of the snow which covered most of Western Canada the Government of Canada and the Government of each of the Provinces of Manitoba, Saskatchewan and Alberta introduced an Unharvested Grain Assistance Policy. Farmers who had less than half of their crop threshed and where the average yield was 10 bushels or less but more than 5 bushels per acre or whose crop average was less than 5 bushels were paid respectively two dollars and three dollars per unharvested acre. Municipalities co-operated in completing applications from farmers and in making inspections where necessary. Although it was not possible to determine the number of farmers who would qualify for payment or the amount to be paid to farmers it was estimated that total payments would be in excess of four million dollars.

In addition to this assistance a Federal-Provincial Policy for sharing freight and partial trucking costs on fodder to east-central Alberta became effective early in November. The area defined for assistance was from Townships 52 to 32 inclusive and west to include Range 12. On rail shipments all the freight on a special rail tariff was paid by the two Governments on farmers' applications approved by the Municipality. On truck shipments the assistance was 5 cents per ton-mile one-way haul less twenty-five miles.

Although approximately three million acres of crop, mainly in central Alberta, remained unharvested at the close of the year an estimate of yields of the principal crops and acreages of each is given in the table following:

Area, Yield and Production of Principal Field Crops in Alberta 1958-1959

	Area		Bus. per Acre		Production	
	1958	1959	1958	1959	1958	1959
	'000 acres				'000 bus.	
Wheat	4,704	5,160	20.4	20.8	96,000	107,000
Oats	2,809	2,850	34.5	38.2	97,000	108,000
Barley	3,846	3,610	27.8	30.7	107,000	110,000
Fall Rye	81.2	73.4	18.1	18.9	1,470	1,400
Spring Rye	18.5	24.9	12.4	13.1	230	300
All Rye	99.7	98.3	17.1	17.3	1,700	1,700
Flaxseed	556	580	11.7	11.5	6,500	6,600
Mixed Grain	225	272	32.9	34.9	7,400	9,500
Peas, dry	3.6	4.7	25.8	23.9	93	112
Potatoes	18.7	18.8	134.0	134.9	2,633	2,533
			lbs.		lbs.	
Mustard	87	79.9	805	626	70,000	50,000
Rapeseed	70	30.8	650	747	52,000	21,600
Sunflower Seed	3.7	17	750	788	2,775	13,400
			tons		tons	
Tame Hay	1,996	2,075	1.25	1.35	2,500	2,800
Sugar Beets	38	35	15.71	13.4	601	472

Seed Cleaning Plants

Five more Seed Cleaning Plants were built and financed under the three-way plan as in the past. The farmers in each case organized an Association under the Co-operative Activities Branch of Industries and Development, and sold $16,000.00 or more of share capital which in all cases was equalled by a Municipal grant and a Government grant. The plants this year cost between $49,000.00 and $50,000.00 and were built at Nanton, Carmangay, Okotoks, Innisfail and Bashaw, giving a total of 34 Municipal plants operating in the Province.

A summary of the past three years' output of the plants is as follows:

	1956-1957	1957-1958	1958-1959
Total bushels cleaned	4,006,565	4,715,122	5,801,336
Total bushels seed	3,559,827	4,209,953	5,161,095
Total bushels seed treated (fungicide)	1,204,513	1,304,035	1,662,796
Total bushels seed treated (wireworm)	49,047	121,888	252,773

Pedigree seed cleaned, as in the past, has remained at approximately 2¼% of the total bushels cleaned at all plants. (2.29% in 1958-1959). Commercial cleaning accounted for 10.9% of the total cleaning.

During the year 96 permits were issued to owners of Seed Cleaning Plants operated for custom cleaning of seed grain. This was the first time plants had been inspected and were issued classified permits to rate them according to construction, equipment and operation. Of these 39 were given First Class permits, 21 Second Class and 36 Third Class. There were 21 portable units included in the 96 issued permits. There were mostly dockage cleaners and they were issued Third Class permits.

CROP IMPROVEMENT

Crop Improvement Demonstration Policy

Six Crop Improvement Projects made up the Policy. Each project was designed to aid District Agriculturists in demonstrating the value of using recommended kinds and varieties of crops, the proper use of fertilizers and the use of improved cultural practices.

Project A—Forage Seed Production

This Project was designed to promote forage seed production in areas where this type of enterprise increases the farm income. In addition, it was used to promote seed production of new forage varieties, thus increasing the availability of such seed to general farm use. Fifty-nine applications were received and a total of 1,950 pounds of seed used in this Project. Only pedigree seed of named varieties was used.

Project B—Pasture Improvement

This Project was continued to increase farmer interest in the need for better pastures. Three hundred and fifty-one applications were submitted by thirty-eight District Agriculturists. Amount of seed distributed was 37,712 lbs. In addition, 7,520 lbs. of fertilizer was supplied to applicants who had established pastures the previous year.

Project C—Balanced Farming

This Project was used to demonstrate to farmers the value of adopting suitable crop rotations. Assistance by providing forage seed was given in the second year of rotation, at a discount of 25 per cent for 1/6 of the acreage up to maximum of 25 acres There were twenty applications and a total of 6,681 lbs. of forage seed was distributed.

Project D—Field Demonstrations, Crops and Fertilizers

Under this Project seed and fertilizer were supplied directly to the District Agriculturist without cost for their use in demonstrating the value of different kinds and varieties of field crops, and where advisable, the use of fertilizers on these crops. Eleven District Agriculturists used the project and a total of 6,140 lbs. of fertilizer and 890 lbs. of forage seed were supplied.

Project E—Crop Variety Demonstration Plots

This Project was used by District Agriculturists to demonstrate varietal difference in cereals and the growth habits of forage crops. Seeds to establish rod row plots of 25 different forage varieties and kinds were provided for 4-H Clubs. A total of 482 plots were established throughout the province.

Project F—Soil and Crop Improvement on Grey-wooded Soils

This Project was provided to aid and demonstrate to farmers the importance of forage crops and fertilizers in the successful management of grey-wooded soils. Forage seed for up to forty acres was provided at half price to applicants who have established a definite crop rotation plan under the guidance of their District Agriculturist and who agree to apply fertilizer at recommended rates. 1959 was the second year this Project was available and 13 District Agriculturists submitted 98 applications. A total of 29,926 lbs. of seed was distributed, an increase of over 7 times that of the previous year.

Forage Crop Seed Production

Total forage seed production declined from the previous year's high of 40 million lbs, to an estimated 31 million lbs. in 1959. Most of the decline was in the legumes and this can be attributed to the inclement fall weather which prevented the harvesting of much of the legume seed crop. On the other hand, grasses were harvested in good condition as comparatively dry warm weather in June and July hastened the maturity of these crops.

Forage seed prices remained much the same as in the previous year.

The following figures give the estimated seed production of the most important forage crops in the years 1954 to 1959 inclusive. The 1959 figures are preliminary estimates only.

	1954	1955	1956	1957	1958	1959
			Thousand Pounds			
Alfalfa	1,815	1,100	625	200	1,800	750
Sweet Clover	5,825	4,250	6,500	3,500	5,000	2,500
Red Clover	1,635	4,000	1,200	2,500	4,835	2,500
Alsike	7,000	7,000	3,500	4,000	10,000	4,000
Timothy	300	500	200	250	1,000	* 1,170
Crested Wheat	220	100	....	130	475	* 900
Brome	4,775	5,000	4,000	2,250	5,000	* 6,500
Creeping Red Fescue	9,100	8,500	4,500	5,000	13,250	*12,500
Russian Wild Rye	....	....	....	....	150	* 330

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*Estimate based on Alberta Department of Agriculture survey.

Alberta Seed and Crop Improvement Association

The former Crop Improvement Association was re-organized in 1959 and the following objectives adopted as part of its Constitution:

(1) To advance all matters tending towards the improvement of crops in Alberta.

(a) by encouraging a closer working arrangement among those engaged in the Grain Trade, Seed Trade, Seed Growers' organizations, University of Alberta and those employed in Departments of Agriculture who are concerned and responsible for seed standards and crop improvement.

(b) by encouraging, fostering and providing, wherever possible, a means of seed distribution of kind and variety recommended for an area and of recognized purity and quality.

(c) to foster the use and production of improved varieties of cereals and forage crops, through publications, posters, pictures, advertising and by any other extension method.

(d) by encouraging research and investigation on varieties of crops of Canadian origin or otherwise that may be of use to Alberta farmers or which may be marketable in the export trade.

(e) by providing a medium for free inter-change of ideas and technical information among all groups represented.

Two meetings were held in 1959 at which representatives from the Grain and Seed Trades, the Canada and Alberta Departments of Agriculture and the University of Alberta were in attendance.

Production of Registered Seed

Cereals and Flax

In the following table a summary is given of estimated yields of cereals and flax inspected for registration and certification:

	1955	1956	1957	1958	1959
	Estimated Yield (in thousands)				
Wheat	2,000	3,000	3,000	3,830	3,477
Oats	1,800	1,600	1,600	839	987
Barley	1,000	900	1,300	1,803	1,079
Flax	243	340	340	722	344

Production of pedigree wheat, barley and flax was less than in 1958. Flax production was less than half that of the previous year. Quality was affected to a considerable extent by the bad harvesting weather experienced in the fall and many fields remained unharvested as winter closed in.

Forage Seed

The table below is a summary of reported acreage of grass and legume crops inspected for registration or certification:

	1955	1956	1957	1958	1959
Brome (Parkland)	10	10	20	......	10
(Lincoln)	......	......	......	......	215
(Manchar)	......	......	......	......	38
Creeping Red Fescue (Olds)	52	48	71	30	262
(Duraturf)	......	......	......	......	346
Crested Wheatgrass (Summit)	31	22	275	1,059	977
(Nordan)	......	......	......	135	178
(Fairway)	......	......	......	726	501
Timothy (Climax)	20	34	612	2,563	9,006
Alfalfa (Vernal)	9	9	48	138	297
(Rambler)	......	......	23	325	438
(Grimm)	30	65	......	22	......
(Ladak)	67	5	35	5	......
Red Clover (Altaswede)	97	27	17	......	57
(LaSalle)	604	87	369	782	261
Sweet Clover (Erector)	10	5	......	......	......
(Cumino)	......	......	......	......	33½
Birdsfoot Trefoil (Empire)	......	......	3	......	......
(Viking)	......	......	......	3	......
Kentucky Bluegrass (Merion)	......	......	140	502	166

Distribution of Forage Seed

Seeds of forage crops were readily available to farmers through elevator agents as well as seed houses throughout the province.

Figures were not available on the amount of seed distributed through these channels.

The Field Crops Branch undertook the multiplication of Rambler alfalfa seed in the United States during 1959. Approximately 54,000 lbs. were produced and will be made available to Alberta farmers. Seed yields of alfalfa in Alberta in recent years has been most unsatisfactory.

As in previous years the Field Crops Branch co-operated with the Canadian Forage Seeds Project in the distribution and multiplication of Foundation and Registered Approved forage seed. The following quantities were distributed:

FOUNDATION	
Creeping Red Fescue (Olds)	50 lbs.
Timothy (Climax)	100 lbs.
Alfalfa (Rambler)	104 lbs.
Red Clover (LaSalle)	560 lbs.
REGISTERED APPROVED	
Timothy (Climax)	1,915 lbs.
Creeping Red Fescue (Olds)	200 lbs.
Alfalfa (Rambler)	2,475 lbs.
(Vernal)	1,050 lbs.
Red Clover (LaSalle)	2,963 lbs.

The Alberta Varietal Zonation Committee

This was an Advisory Committee to the Provincial Crop Production Board. Its purpose was to co-ordinate the findings of the various experimental agencies in the province with respect to grain varieties, and to recommend those most suited to the various soil climatic zones. The Committee was composed of representatives of the following: Department of Plant Science, University of Alberta; the Research and the Production and Marketing Branches of the Canada Department of Agriculture; and the Provincial Field Crops Branch. The Annual Meeting of the committee was held in December. The following changes in recommendations were made: Olli barley was removed from the recommendations in Zones 3A and 3B and replaced with Parkland in only Zone 3A. In Zones 4A and 4B Husky was deleted and Parkland was added. No change was made in the recommendations for Wheat or Oats. In Flax, the variety Rocket was deleted from all Zones.

Publication 91 "Varieties of Grain for Alberta" was revised.

Forage Crops Advisory Committee

This Committee was similar to the "Varietal Zonation Committee" except that its function was to deal with forage crops. Its Annual Meeting was held in December at which papers were presented on the following topics:

The progress of Alfalfa research in Alberta; the multiplication of Chinook Orchard Grass seed; Fertilizer trials on Fescue; Fertilizer trials on seeded pastures; Pollination in relation to seed yields. In addition many subjects were discussed relevant to forage crops production.

Seed Drill Surveys

In 1959 Seed Drill Surveys were conducted in nine Municipal Districts. Following is a summary of the results of Seed Drill Surveys for the years 1950 to 1959 inclusive:

PERCENTAGE SAMPLES GRADING:

Year	No. of Districts	No. of Samples	No. 1 Seed	No. 2 Seed	No. 3 Seed	Rejected
1950	12	835	32.0	9.0	19.0	40.0
1951	9	630	26.0	17.0	17.5	39.5
1952	10	702	28.3	15.3	15.2	41.2
1953	15	1,199	33.0	12.0	17.5	37.5
1954	19	1,540	31.5	14.0	17.0	37.5
1955	17	1,362	38.0	11.0	17.0	34.0
1956	23	1,680	40.0	13.0	16.5	30.5
1957	22	1,626	36.0	17.0	17.0	30.0
1958	2	197	46.3	17.2	13.4	23.1
1959	9	800	37.6	12.2	22.0	28.2

Agricultural Relief Advances Act

Most of the central and northern Peace River area was subjected to extreme drought conditions in the summer of 1958. As a consequence of this it was necessary to issue advances to farmers within that area under the Agricultural Relief Advances Act in order to enable farmers to finance their seed and fuel oil requirements. A total of $134,798.25 worth of seed and fuel oil was advanced on crop liens to 523 farmers in Improvement Districts.

The Seed Dealers Act

The regulations pursuant to the Seed Dealers Act was amended in 1959. Three charges were laid against individuals who were operating within the province without a license. One of these individuals was fined $100.00 and costs; the other two left the province and did not return during 1959. As a result two charges are still outstanding.

Thirty-five licenses were issued to seed dealers operating in the province.

The Seed Control Areas Act

Only two such areas were in operation within the Provinces, viz, the Hays Seed Control Area and the Wanham Seed Control Area.

Other Activities

In addition to answering numerous enquiries, re crops, varieties and production, several talks were given at meetings and on the radio.

Other activities included judging at Seed Fairs and 4-H Achievement Days, preparing articles for Agricultural Notes and assisting in the preparation and revision of pamphlets.

International Seed Shows

For many years the Department has given assistance to exhibitors at the International Grain and Hay Show, Chicago, and the Royal Agricultural Winter Fair, Toronto. The Chicago Show was cancelled in 1958, however, assistance was provided to exhibitors at the Royal Show, Toronto.

Exhibits were assembled and shipped to the Show by the Field Crops Branch, with shipping costs both ways being paid by the Branch. The exhibits were supervised at the Show, and in 1959 premiums were paid as follows: All prize monies won at the Royal were increased by 50%. A special honorarium of $25.00 was paid for each first prize in the classes for wheat; oats; barley; rye; flax; alfalfa; alsike; red clover; sweet clover; brome; fescue; timothy; crested wheatgrass; field beans; russet (netted gem) seed potatoes; potatoes in the Vegetable and Cooking classes and 4-H Club exhibits. Such honoraria was increased to $100.00 for championships won with exhibits of wheat; oats; barley; rye and forage seeds.

The names of the 1959 winners at the Toronto Royal Winter Fair were as follows:

World Championship:		
Wheat	Douglas J. Mackintosh	Granum
Reserve Championship:		
2-rowed Barley	W. S. Kizema	Warner
First Prizes:		
Sunflower	E. E. Gross	Redland
Alsike Clover	Tom Corlett	Clairmont
Sweet Clover	George Jordan	Wembley
Brome Grass	Robert McKenzie	Hythe
Creeping Red Fescue	Tony Semak	Clairmont
Oats	Geo. Lamb	Cherhill
Barley	Tony Semak	Clairmont
Wheat	Douglas J. Mackintosh (4-H)	Granum
Oats	Peter Skitsko (4-H)	Bruderheim
Potatoes (Netted Gem)	T. Fujimoto & Sons	Rainier
Potatoes, Early (Warba)	Lillian Hatch (4-H)	Cherry Grove
Cooking Potatoes	T. Fujimoto & Sons	Rainier

SOILS AND WEED CONTROL

Weeds

General

Weed infestations in Alberta and resulting crop losses were above the average this year. Although there was considerable work on fallow and stubble land during the late fall of 1958, the light snowfall melted early leaving the soil quite dry early in the spring with little germination of weed seeds. Many farmers delayed seeding with the hope of destroying the early Wild Oat growth, but generally there was little growth until the end of May. Good moisture at this time promoted heavy Wild Oat and Stinkweed stands. As a result, a number of wheat fields were plowed and resown to barley or greenfeed. Because of unsatisfactoy spring growing conditions, there was some reduction in early weed spraying in many areas; but these operations were increased later. Canada and Perennial Sow Thistle were quite widespread, but spraying for these weeds continued from July until late fall where weather permitted. Fallow fields were generally well looked after during early summer but excessive moisture in the fall prevented proper cultivation and many fields went into winter in a poor condition.

Weed Surveys

The annual weed survey conducted by this division through the co-operation of District Agriculturists, Field Supervisors and Weed Inspectors, indicated the extent of control measures on infestations of some of our common weeds. A total of 63 areas including Municipal Districts, Counties and Improvement Districts were represented covering about 19 million acres of cultivated land.

	No. of Areas Where Weed Is Increasing	No. of Areas Where Weed Is Held in Check	No. of Areas Where Weed Is Decreasing
Tartary Buckwheat	10*	31	13
Wild Oats	20	34	9
Couch Grass	22	35	6
Canada Thistle	29	25	9
Perennial Sow Thistle	38	19	6
Hemp Nettle**	10	31	3
Smartweed**	14	21	2

---

*Only 9 areas of the 63 areas were free of Tartary Buckwheat.
**Survey in 48 reporting areas.

The results of a survey of persistent perennial weed infestations conducted through 48 Agricultural Service Board and 15 Improvement District Weed Inspector areas are outlined in the following table:

	No. of Areas Reporting Infestations	No. of Farms with Infestations	No. of Acres Infested
Hoary Cress	23 out of 63	1,111	7,170
Russian Knapweed	15 out of 63	270	307
Field Bindweed	17 out of 63	1,469	3,728
Toad Flax	51 out of 63	6,836	32,578
Leafy Spurge	30 out of 63	250	4,331

There were 12 areas where no Toad Flax infestation was present. The survey also indicated a widespread infestation of White and Cow Cockle. Of the 48 areas reporting, 32 show these weeds present. There were 24,608 acres of cockle on 1,290 farms.

A special survey was conducted in the spring to determine the extent of Wild Oat infestations throughout the province. A total of 36 areas were represented covering about 12,000,000 acres of cultivated land. This estimate (although only approximate) shows that 4,000,000 acres in the checked areas are infested with Wild Oats to the extent that the farmer was much concerned about the problem.

Weed Identification

The weed and plant identification service was continued during 1959 with a large number of weed kits mailed out to the field staff. This service was available to all District Agriculturists, Field Supervisors, Weed Inspectors and farmers who wish to have plants identified and control recommendations given. This year there were 182 weed specimens received which were identified (assisted by Plant Science, University of Alberta) and control measures given. The following table shows the extent of increase in the plants mailed for identification in the past three years:

Year	1957	1958	1959
No. plants submitted	72	168	182

Field Supervisors and District Agriculturists set up 118 weed displays at Fairs and Short Courses to better acquaint farmers with control measures of weeds in the locality. Provincial weed supervisors assisted with many of these exhibits.

New Weeds and Weeds of Increasing Importance

(1) Perennial Ragweed (**Ambrosia psilostochva**) was reported this year and may be considered as a new weed in Alberta. It was located as a small infestation east of Granum. Ragweeds, being wind-pollinated, are responsible for a large amount of "hay fever".

(2) Scentless Mayweed or Chamomile (**Matricaria inodora**) was reported in a number of districts in 1957. During 1959 an intensive survey showed that this weed was more prevalent than previous surveys had indicated. More inspectors are becoming acquainted with the weed and able to locate infestations without difficulty. Fourteen (14) areas out of 48 have infestations of Scentless Mayweed to the extent of 1,811 acres and numerous patches. Control measures were carried out in most of these areas to prevent its spread. Scentless Mayweed was named as a Class B Noxious Weed.

(3) Canada Thistle and Perennial Sow Thistle have been increasing in many parts of Alberta. Extra efforts were put forth to keep them in check.

Noxious Weeds Act

(a) Legislation

Regulations were established under Section 26 of the Noxious Weeds Act to provide for the issuing of Classified Permits to the operators of Seed Cleaners. The outline of this classification appears in the section dealing with Seed Cleaning Plants in the 1958 Annual Report.

(b) Inspection and Enforcement

The Branch employed 15 Weed Inspectors (4 less than in 1958) to enforce the Noxious Weeds Act in Improvement Districts. The reduction in number of Weed Inspectors was due to the establishment of Agricultural Service Boards in Improvement Districts where the Weed Inspector was replaced by a full-time Field Supervisor. Four (4) Weed Supervisors were employed to assist Field Supervisors and Weed Inspectors with weed legislation. They were located at Grande Prairie, Lethbridge, Edmonton and Vermilion.

The 49 Field Supervisors, who were also Weed Inspectors, had 81 summer assistants. The weed inspection force in Alberta totalled 151 men as compared with 139 in 1958.

Field Supervisors and Weed Inspectors issued a total of 2,911 "Notices to Destroy Noxious Weeds" on 68,983 acres of land. This is an increase of 792 notices and 19,767 acres over 1958. They also issued notices prohibiting seeding of land to crops in 1960, on 33,322 acres as compared with 21,998 acres in 1959. There were 3 court prosecutions under the Noxious Weeds Act.

Field Supervisors indicated they spent an average of 53% of their time on weed control work and together with their assistants visited 20,919 farmers on weed control.

Chemical Weed Control

(a) Soil Sterilants

The policy of distributing soil sterilants to municipalities at cost continued in 1959. The soil sterilants which were available were Sodium Chlorate, Polybor Chlorate, D.B. Granular and Concentrated Borascu. These sterilants were primarily used on Toad Flax, however, other weeds such as Leafy Spurge, Field Bindweed, Russian Knapweed, Hoary Cress and Couch Grass, where they appear in patches, were treated.

The total distribution of soil sterilants was 430,230 pounds. This is over 90,000 pounds more than in 1958. The amount of soil sterilants distributed during the past five years is shown in the following table:

	1955	1956	1957	1958	1959
			Pounds		
Sodium Chlorate	347,784	379,718	190,449	222,656	229,040
Polybor Chlorate	21,450	34,550	20,090	35,265	90,150
D. B. Granular	....	7,050	18,700	57,450	75,340
Concentrated Borascu	....	....	....	24,650	35,700
Totals	369,234	421,318	229,239	340,021	430,230

The figures indicate the use of Sodium Chlorate has remained about the same during the last two years while there has been an increase in the use of borate-chlorate mixtures. This was due to the effectiveness of the borate-chlorate mixtures for the purposes used with no fire hazard problems. The use of TCA increased some 5,000 pounds to a total of 22,000 pounds for 1959. TCA was used largely for the control of Couch Grass. CMU was used to some extent this year for the control of perennials and is reported under "Weed Control Trials and Demonstrations" in this section.

(b) **Selective Herbicides**

The use of selective herbicides for weed control in cereal crops increased 17% over 1958 to an all time high of 6,216,000 acres or 50% of the total acreage in cereals. Last year 43% of the total seeded cereal crop and flax in Alberta was sprayed. The following table shows the total acreage treated during the past five years:

Year	1955	1956	1957	1958	1959
Acreage Crop Treated	4,250,000	4,360,000	4,067,000	5,307,000	6,216,000

The following figures show the acreages treated by various common methods of application and the type of formulation used:

Acreage Treated with 2,4-D and/or MCPA	Percent of 1958	Method of Application		Percent Ester of 2,4-D Used
		% Sprayed	% Dusted	
6,216,000	117.1	98.4	1.6	83.4

The use of MCPA on Oats and Flax was increased from 750,000 acres in 1958 to 780,000 acres for the current year.

Agricultural Service Boards were very active in encouraging farmers to spray crops for weed control. Twenty-nine (29) municipalities handled selective herbicides through their Boards making them available to farmers at cost.

The following table compares the extent of selective herbicide used in Field Crops in Alberta in 1959, as compared with its use in the other western provinces:

Field Crops Treated In 1959

Province	2,4-D and/or MCPA (Acres)	Percent of 1958
Manitoba	2,038,000	97.6
Saskatchewan	7,630,000	146.1
Alberta	6,216,000	117.1
British Columbia	65,000	55.1

Weed Control Trials and Demonstrations

During 1959, this division continued to put out many weed control demonstration plots in conjunction with Agricultural Service Boards and Weed Inspectors throughout the Province. An extensive series of 25 plots put out in 1957 using many herbicides was assessed in 1959 with the results to be used to determine future use of these materials and make further recommendations. Observations indicated that various herbicides now in use when combined were more effective on certain weeds.

The dormant brush spraying trials started in 1958 were continued with a new series put out in the Municipal Districts of Strathcona and Smoky Lake. Results of trials set out in the previous year were not too promising, however, rates of application of herbicide and carrier have been altered in the 1959 trials with the hope of obtaining better control of brush.

Two additional herbicides were tested by this division— a 2,4,5-T proprionic acid for broad-leaved weed control in lawns and CMU, a long-term soil sterilant for Couch Grass control, with promising results from both materials. The former chemical gave good control of White Dutch Clover and Common and Mouse-eared Chickweed in lawns without affecting the grass. This material was distributed by this division for trial use.

Ten (10) formulations were obtained for the control of weeds in shelterbelts and tree plantings, and set out throughout the province. Two of these showed very good results. This work will be continued.

An extensive chemical weed control demonstration field day was staged at Gleichen on the Blackfoot Indian Reserve in early June of 1959 in co-operation with the County of Newel and the Indian Reservation. Three aircraft and seven ground sprayers staged the demonstration where many aspects of chemical weed control were discussed. Over 300 people were in attendance to witness "Operation Weed Killer" as this demonstration was called.

Weed Control with Forage Crops (Project 2)

This project was designed to assist District Agriculturists and Agricultural Service Boards to implement weed control by using grasses and legumes on farms;

(i) where weed control with forage crops can be effectively demonstrated,

(ii) placed under Supervision or Reclamation under the Agricultural Service Board Act,

(iii) where notice prohibiting seeding of land is placed under the Noxious Weeds Act.

The Department shared equally with the applicant the cost of forage seed for an area not to exceed 20 acres, but increased to 30 acres where land was placed under Supervision or Reclamation, or a parcel of land had been prohibited to seeding. Each District Agriculturist's area was allowed fifteen (15) applications.

The following table indicates the extent of participation by the Districts and the quantity of forages used during 1958 and 1959:

	1958	1959
No. of District Agriculturists' Districts Participating	14	19
No. of Applications	30	146
Amount of Forage Seed Supplied (lbs.)	15,718	35,595
Acreage Covered	....	2,909

Crown Lands

Soil sterilants, grass seed and 2,4-D were made available for use on weed infestations on Crown lands. A total of 500 lbs. of soil sterilants and a supply of 2,4-D was distributed to Weed Inspectors under this policy. The soil sterilants were used mainly for Toad Flax and Leafy Spurge control. One municipality, with the co-operation of this Branch, commenced arrangements to obtain a lessee on a weed problem farm.

Roadside Seeding and Spraying

(a) **Alberta Highways**

The policy of seeding Government highways was continued. The Department of Highways supplied the seed and the Field Crops Branch provided the equipment and did the seeding. The following table indicates the number of miles seeded and the amount of seed used in the past five years:

	No. of Miles Seeded	Pounds of Seed Used
1955	453	23,796
1956	431.5	24,395
1957	438.2	25.810
1958	623.36	44,780
1959	366.76	29,590

The average number of pounds of seed used per mile was 66.51 as compared with 64.7 pounds per mile the previous year.

The following are the amounts of grass and legume seed by kinds, used on highways in the past three years:

	1957	1958	1959
Brome	6,330	9,612	6,300
Creeping Red Fescue	6,630	13,055	5,930
Alsike	11,460	16,551	8,690
Crested Wheat	800	3,347	6,960
Timothy	0	1,305	670
Alsike-White Dutch	490	10	470
Kentucky Blue Grass	100	900	400
Brome-Fescue Mix	0	0	170
	25,810	44,780	29,590

Of the 1959 total, 5,200 pounds of forage seed and additionally 4¼ bushels of rye was used for special cases such as medium strips, clover leafs, fill banks, etc. The same general mixtures were used in 1959.

The 1959 highway seeding program was considerably below the previous year due to the inclement weather during the latter half of the summer delaying the road construction program and consequently roadside seeding.

Observations were continued throughout the year on the trials of methods of seeding steep slopes on highway fills and cut banks. One project is located near the Fort Saskatchewan River bridge. The results indicate that a grass mixture of predominately crested wheat grass on terraces at intervals of from two to three feet is most successful. The process of loaming, seeding and applying a water-asphalt emulsion also appeared to be satisfactory, however, it would be expensive for general use. A cover crop of oats or rye reduced the amount of erosion considerably on this plot.

Some time was spent with the Landscape Architect of the Federal Parks Department, W. J. Johnstone, to observe first hand the "Hydro Seeder", and "Mulcher" operations in seeding roadsides in the parks. This method has resulted in obtaining excellent stands of grass on all types of cut banks, fills, etc. and virtually eliminating serious erosion. Based on this work, recommendations were made to the Highways Department to purchase some basic equipment with the object of using it for Provincial Highway roadside seeding, in situations where the present equipment is inadequate. It was estimated that the average cost of seeding roadside with the new equipment would be about $26.00 per acre.

(b) **Municipal Roads**

This Branch continued its policy of supplying suitable forage mixtures for seeding demonstration areas on newly constructed back-sloped roads in Municipalities having Service Boards. The following table indicates the amount of seed supplied by the Branch and the total number of miles seeded. The table also indicates the extent of mowing and spraying done by Municipalities.

	Pounds of Seed Supplied	No. of Miles Seeded	No. of Miles Mowed	No. of Miles Sprayed
1955	30,408	1,041	7,500	6,500
1956	28,500	1,818	12,018	12,486
1957	32,785	1,624	11,817	14,890
1958	37,850	2,216	20,083	17,220
1959	51,800	1,883	23,011	17,837

The following table shows the kinds and amounts of seed used:

	1958	1959
Brome	7,550	11,600
Creeping Red Fescue	11,350	15,700
Timothy	3,750	4,500
Alsike	8,100	7,450
Crested Wheat Grass	7,100	9,700
Alsike-White Dutch	0	600
Alfalfa	0	500
Sweet Clover	0	100
White Dutch Clover	0	1,650
Total	37,850	51,800

Alberta Advisory Weed Committee

This new committee was officially approved this year, and comprised members from Research Stations, the University of Alberta and the Field Crops Branch. The objective of this committee was to review the various weed control recommendations with a view to adapting them to the province, and in general to recommend provincial weed control policies. This committee also points out the weed problems and the research that might be needed to find solutions.

The annual meeting held in December approved the weed control recommendations of the National Weed Committee, outlined the publications required, considered the merits of establishing a Field Crops Branch diagnostic clinic, reviewed methods and needs of weed surveys and discussed the various weed control activities of the province.

Agricultural Service Boards

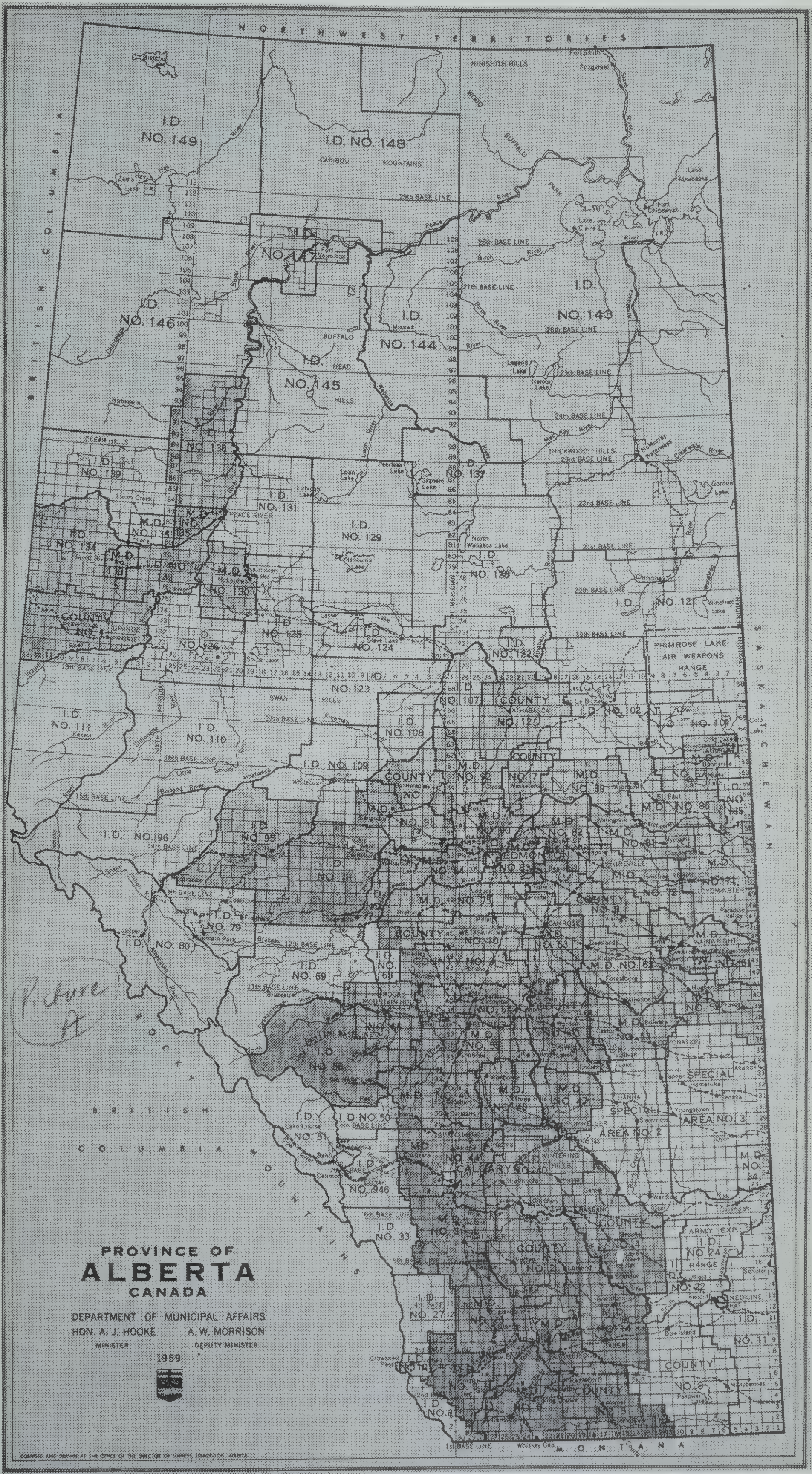
Agricultural Service Boards continued to increase in 1959. Four new Boards were formed, making a total of 49 in operation. These new Boards are in the Municipal District of Paintearth, County of Warner, one for the Improvement Districts of 77, 78 and 95 with headquaters at Evansburg and a joint Board consisting of Local Improvement District No. 134 and Municipal District of Spirit River.

Agricultural Service Boards placed a total of 97 parcels of land under supervision during the year, 194 parcels were continued under supervision and 54 parcels were released. Service Boards also placed 10 new parcels under reclamation orders, continued with 43 parcels and released 7 parcels from the reclamation order.

Agricultural Service Boards continued to hold tours and field days to acquaint Board members, Councillors and ratepayers with the various soil, weed and other agricultural problems in their area. There were 40 tours and 188 field days and meetings with 6,978 people in attendance.

Service Board Agreements

Municipal Districts, Counties and Local Improvement Districts with Agricultural Service Boards were eligibile for grants up to $2,600.00 during 1959, an increase in the maximum grant of $200.00 per municipality over 1958. There were additional grants to municipalities for Brucellosis control programs and for the construction of seed cleaning plants. (For details see elsewhere in this report.) Forty-seven (47) Service Boards, in addition to the General Service Board Agreement, made use of a special assistance grant for the control of persistent perennial weeds and for soil conservation. The maximum grant to any one municipality for these Special Agreements was $1,200.00. The following is an



Picture A

Shaded portions show the areas served by 49 Agricultural Service Boards in 45 Municipalities and 4 Improvement Districts.

outline, of the Special Agreement section of the Memorandum of Agreement:

"The Department will pay to the Municipalility:

(1) One-third (1/3) of the cost of soil sterilant or other approved herbicide when these are used on farm land for the control of the five (5) bad weeds, provided the Municipality shares equally with the farmer the remaining cost of the chemical; Maximum payment by the Department	$1,000.00
(2) One-half (½) the cost of the soil sterilant or other herbicide approved by the Department when these are used on Municipal roads for the control of the five (5) bad perennial weeds; Maximum payment by the Department	200.00
(3) The cost of cultivation up to $3.00 per acre to a maximum of 50 acres per quarter section. This assistance is applicable only to land placed under Reclamation (Section 14, Agricultural Service Board Act); Maximum payment by the Department	300.00
(4) One-third (1/3) of the cost of approved forage seed to a maximum of 40 acres per quarter section for use on land which is impoverished or in the process of becoming impoverished through weed infestation, wind or water erosion, or any other cause that has seriously affected or may seriously affect the productivity of the land or the welfare of the owner or the occupant of the land, provided the municipality shares equally with the farmer the remaining cost of the seed; Maximum payment by the Department (Maximum grant for 1, 2, 3, 4 is $1,200.00)"	400.00

SOIL CONSERVATION

Wind and water took its toll again in 1959 although generally these were not as severe as in 1958. The light snowfall of last winter melted early and the moisture was absorbed into the soil with very little run-off. Windy weather in April dried surface soils; there was considerable soil drifting in the south and on light soils as far as Lacombe and Two Hills. At the end of April moisture was generally poor to fair except in the south-west and the Peace River area. Subsoil moisture reserves were low in nearly all parts of the province.

Soil drifting was most severe in the Lethbridge and Drumheller regions. In the Lethbridge-Taber area at least 1,200 acres of sugar beets had to be reseeded. A meeting of District Agriculturists and personnel of the Research Station was organized in May at Lethbridge to assess the drifting problem. Recommendations made at this meeting were summarized and circulated to all field staff.

The annual survey indicated a decrease in the total amount of damage caused by wind erosion and an increase in damage from late rains by water erosion as compared with the previous year. In 48 municipalities water erosion caused damage on an estimated 875 parcels of land and 1,154 parcels were damaged by wind erosion. Only damage was recorded where it was of significant concern to the farmer. District Agrciulturists and Field Supervisors, in co-operation with this Branch, held 39 soil conservation demonstrations.

The Soil Conservation and Reclamation (Project 1) demonstration policy of this division was completely revised and expanded early in 1959 in order to make it more effective.

The project was designed to encourage the use of forage crops and fertilizers in reclaiming and increasing the productivity of soil damaged by wind, water, alkali or any other factor. The following table shows the extent of its use during the last two years:

	1958	1959
No. of Demonstrations	41	187
No. of District Agriculturist Areas Participating	17	23
Total amount of Forage Seed (pounds)	8,956	37,238
Total amount of Fertilizer (pounds)	0	2,000

The forage seed and fertilizer were used on 3,210 acres. The project was also designed so Agricultural Service Boards could benefit by its use on land placed under Supervision or Reclamation.

Save the Soil Campaign

The "Save the Soil" competitions were carried out in three municipal districts, Sturgeon River, Strathcona and Stony Plain, with a total of 43 farmers participating. Eleven (11) winners received certificates of achievement from the Minister of Agriculture at the Agricultural Short Course held at Edmonton. A number of Municipalities and Improvement Districts in the Peace River area also conducted a similar "Campaign" with trophies awarded to the winners at a well attended banquet.

Soil Fertility

This division established an extensive fertilizer demonstration program to demonstrate to farmers the proper use under various soil conditions. Through the Agricultural Service Boards over 50 demonstration plots were established in 21 municipalities. Over 12,000 pounds of fertilizer, supplied by the trade, was used in these demonstrations. This Branch threshed 400 grain samples from 30 plots, tabulated the results and the information was returned to the District Agriculturist and the co-operating farmer. Observations and results were reported to the annual meeting of the Alberta Advisory Fertilizer Committee.

The use of fertilizer increased 36%. Figures for the past 3 years are as follows: 1957—38,337 tons; 1958—47,952 tons; 1959—65,185 tons.

The Publication, "Fertilizer Recommendations for Alberta" was reprinted in 1959. The much larger Publication, "Fertilizers in Alberta" was completely revised and printed in the latter part of the year.

The Supervisor and Assistant Supervisor, both members of the Alberta Advisory Fertilizer Committee, attend the Committee meetings and assisted in planning some of the fertilizer work which was undertaken.

Displays, etc.

A large soils and soil conservation display was prepared by this division for the main entrance, Legislative Building, during the months of May and June.

The same display was also shown at fairs in Camrose, Wetaskiwin, Willingdon, Andrew and Mayerthorpe.

Miscellaneous

The annual provincial Agricultural Service Board Conference was held at Edmonton in March with the Field Supervisor and District Agriculturist from each Service Board in attendance. Regional Service Board meetings were held with all members of the Boards attending at Westlock, Two Hills, Sedgewick, Wetaskiwin, Calgary and Lethbridge.

Special weed meetings of Local Improvement District Inspectors were held at Edmonton and Peace River at the beginning of the weed inspection season with all weed inspectors in attendance.

A meeting in August at Lethbridge was organized to discuss weed problems and the control of weeds on irigation ditches and canals. This meeting was attended by representatives from irriga-

Soil is Life PROTECT IT
The Eleventh Commandment
PRESENT GULLY EROSION
ALBERTA DEPT. OF AGRICULTURE
Field Crops Branch
offers ENCOURAGEMENT
ASSISTANCE
SERVICE to promote
soil conservation practices in Alberta
by way of
1. Grants to municipalities.
2. Supplying forage seed for special purposes.
3. Supplying trees to farmers.
4. Highway and roadside seeding.
5. Fertilizer recommendations.
6. Agricultural Service Boards.
7. Bulletins and Publications.
8. "Save the Soil" campaigns.
9. Demonstrations.

This display was set up at the Legislative building and [illegible] other areas, and viewed by many people.

tion companies and officials of the Department of Agriculture and Municipal Affairs. Recommendations from this meeting were forwarded to the Irrigation Advisory Committee and other Departments concerned.

The Supervisor and Assistant Supervisor of Soils and Weed Control attended 75 Agricultural Service Board and other meetings, made 65 field trips, went on 10 field tours and spoke at 12 Agricultural Short Courses.

This division also assisted the Junior Activities Branch with setting up Senior Project of their Grain Club Program, which dealt with fertilizer use.

Twenty-two (22) radio talks were made and 25 press releases were written for the Radio and Information Branch on timely soils and weed subjects.

The publication, "Suggestions for the Use of Soil Sterilants" was revised and reprinted. An addendum was added to the publication, "Weed Control With Chemicals" based on the 1959 Weed Control Recommendations of the National Weed Committee (Western Section) and "The Control of Canada and Sow Thistle" was revised and reprinted.

CROP PROTECTION AND PEST CONTROL

CROP PESTS

Grasshoppers

The infested area in southern Alberta increased from 3,110,000 acres in 1958 to 4,150,000 acres in 1959. Of the total infested area, 1,150,000 acres were rated moderate and 3,000,000 acres as light. The area extended from Ranges 12-16 at the Montana border, north-east to Irvine, west along the South Saskatchewan River to Taber, north to Vauxhall, then through Travers, Champion, Claresholm, Macleod, Magrath and Milk River to complete the loop. Light infestations also occurred north of Pincher Creek, Schuler-Sandy Point and in the Bindloss-Acadia Valley areas. The three major pest species were present with the migratory type most prevalent. Timely cultivation and spraying resulted in effective control and little crop damage. Wet weather and rapid growth generally minimized damage.

Under the grasshopper policy, the Department distributed Aldrin and Dieldrin insecticides at cost, less shipping and handling charges, through municipal and district offices. The following table shows the 1959 situation and control program with 1956-58 for comparison purposes:

	1956	1957	1958	1959
Acres of Land Infested	1,900,000	1,700,000	3,110,000	4,150,000
Acres Crop Menaced	2,000	3,000	150,000	500,000
Acres Crop Destroyed	100	100	200	500
Lbs. Tech. Aldrin Used	200	50	4,250	240
Lbs. Tech. Dieldrin Used			70	10,750
Acres Treated	3,000	400	35,500	173,800

The above figures are estimates, based on distribution from Department stocks and not including insecticides from commercial outlets. The introduction of Dieldrin has reduced the cost of spray material from 25 cents to 15 cents per acre.

The 1959 grasshopper policy, forecast and map were printed and distributed to municipal and district offices and to other interested agencies. Control information was distributed by bulletins "Grasshopper Control' 'and "Chemical Control of Insect Pests—1959." The 1960 forecast, prepared by the Lethbridge Research Station, predicts an increased grasshopper population over a larger area.

Wheat Stem Sawfly

The sawfly population and damage were the lowest in over 30 years. In Southern Alberta, large acreages of unfavorable hosts such as resistant wheat varieties, durum, mustard, rapeseed, sunflower and flax helped to reduce damage. Rescue and Chinook were grown on 7.2% and durum on 3.5% of the total wheat acreage. Forecast maps, prepared by the Lethbridge Research Station, were distributed to municipal and district offices.

Cutworms

Pale Western Cutworms have increased over the last few years. During 1959, some damage was reported from southern Alberta and a few fields were sprayed. Moths were about twice as numerous as usual and the increase is expected to continue in 1960.

Red Backed Cutworms occurred in large numbers for the third successive year. Infestation and damage were general in gardens and fields throughout the parkland, wooded and foothills areas with heaviest damage in central Alberta, centering on Lacombe, as compared to the area northwest of Edmonton in 1958. In the main, severe damage occurred on summerfallow and cropland that was weedy during the 1958 summer. Some fields required reseeding but most were saved by spraying.

Since commercial supplies of insecticides were low during the 1958 outbreak, various firms were contacted during the winter to establish reserve supplies and a more effective distribution system.

During 1959, chemicals were readily available in most districts. Figures for insecticide sales indicate that an estimated 50,600 acres were sprayed as compared to 24,000 acres treated in 1958 when chemicals were not readily available. Total infestation was estimated at the 1958 level of one-quarter million acres.

Several timely mimeograph and radio reports were issued on control measures and supply sources of chemical. The 1960 forecast by Federal Research predicts continued heavy infestation. This report along with summerfallow control measures was distributed to municipal and district offices.

Wireworms

Population and damage remained low in most districts. Some loss occurred where farmers have stopped cereal seed treatment. Sugar beets and potatoes on lighter soils were damaged in some districts. Insecticide use as a band application, often mixed with fertilizer, proved effective. During 1959, municipal seed cleaning plants treated 252,800 bushels for wireworm control as compared to 121,800 bushels in 1958.

Beet Webworm

Following the severe outbreak of 1958, webworm populations crashed. Few crops other than sugar beets were infested. About one-half of the beet acreage was sprayed once compared to several sprayings of the total acreage in 1958.

Alfalfa Weevil

Infestation has spread north of the Oldman River into the Scandia district. Older infestations closer to the Montana border have populations that are heavy enough to warrant spraying. Timely rains during 1959 prompted good recovery.

Sweet Clover Weevil

Infestation and damage continued high in most areas where sweet clover is extensively grown. In such areas as High River, Lacombe and Edmonton the weevil is often the limiting factor and at least one spray treatment per season is necessary. Several plots of granular insecticide, broadcast with the seed, were put out in the Lacombe district. Results will be followed up since this method, if effective, would reduce cost of chemical and application.

Red Clover Thrip

This thrip is reported increasing on red clover at Athabasca, Lac La Biche and most districts in northern Alberta where the crop is grown for seed. Test spraying with Malathion was done in the Athabasca district during 1958 and 1959. Results are conflicting. The effect of the thrip on seed set and the need for chemical control is still debatable.

Vegetable and Special Crop Insects

Colorado Potato Beetle infested some fields in the irrigation area and heavier infestations were sprayed. Sugar Beet Root Maggot continued to damage crops, especially on light sandy soils. Some 5,000 acres in the Turin and Taber districts were effectively treated with a Heptachlor—fertilizer mixture. Root Maggots of cruciferae and onions infested most commercial and garden crops, often causing complete loss. Recommended chlorinated hydrocarbons gave good control. Publication 130 "Control of Garden

Pests" continued in high demand for information on various garden pests.

Shelterbelt Insects

Spruce and Larch Sawfly occurred several weeks late and infestations were lower than usual. Aphids and Spider Mite were numerous on shelterbelts and ornamentals. Bruce Spanworm, Aspen Tortrix and Willow-Leaf Beetle were fewer and caused less defoliation of willow and poplar. Forest Tent Caterpillar continued to increase. Large scale outbreaks and defoliation occurred in the Cypress Hills, St. Paul-Bonnyville area and several districts in the Peace River block. Pear Slugs continued numerous and damaged cotoneaster, mountain ash and other ornamentals.

The Department 50% grant for sprayers was continued during 1959. Seven municipalities obtained sprayers under the policy: the Municipal Districts of Smoky River No. 130, Taber No. 14, Lamont No. 82, Westlock No. 92 and the Counties of Vulcan No. 2, Newell No. 4 and Thorhild No. 7. Thirteen municipalities now have spraying equipment for insect control. Some 140 shelterbelts were sprayed by Department and municipal sprayers.

Stored Grain Insects

Rusty Grain Beetle, Grain Mites and other pests continued to infest stored grain, mostly in southern Alberta but infestations were fewer. Approved gas masks and canisters for fumigating grain were supplied to farmers through district offices. The Lethbridge office served a considerable number of farms in southern Alberta.

Other Insect Pests

Red Clover Mite, Strawberry Root Weevil and Manitoba Maple Bug continued as frequent invaders of homes. Garden Slugs were numerous during the wet fall period. Some 185 insect specimens were identified and control information was supplied as requested. Publication 139 "Chemical Control of Insect Pests—1959" was prepared and distributed to all municipal and district offices.

CROP DISEASES

Diseases of Cereals

Crop diseases were generally less severe than usual. Smuts and Root Rots of wheat and barley remained at the low level of 1958. Several fields in the parkland area suffered moderate to severe damage from Take-All Root Rot where wheat followed wheat on sod-breaking or back-setting. Stem and Leaf Rust occurred only in trace amounts.

Blast and Halo Blight of oats remained low. Covered and Loose Smut of oats were low except in a few fields where seed treatment was not used. Manganse Deficiency of oats was widespread in the parkland area, especially on soils with high organic matter. This complex was likely associated with the cool, dry spring.

Leaf diseases of barley remained low. Scald and Net Blotch occurred in the heavier rainfall area of the foothills and decreased from west to east.

During the spring, many cereal specimens and reports were received from the brown and shallow black soil areas. These showed a pinched effect on the seedling due to ground frost, wind damage, etc. Recovery was good.

Timely articles were issued on seed treatment and disease control by crop rotation and other cultural practices. Municipal seed cleaning plants treated 1,662,800 bushels of seed for seed-borne diseases compared to 1,300,000 bushels in 1958.

Diseases of Other Crops

Flax Rust remained low but Seedling Blight of flax showed up in most fields in trace to severe amounts, indicating the need for proper seed treatment. Winter Crown Rot affected some forage crops and lawns throughout the province. Fireblight of apples, mountain ash and related ornamentals occurred at the high level of 1958. Needle Drop of pine and spruce was unusually prevalent following cold injury of early spring.

Diseases of Potatoes

(a) General

Most inspected fields showed varying amounts of common diseases as black-leg, rhizoctonia, scab, leaf roll and wilts. Generally the incidence was low, likely because of greater use of certified seed, better sanitation and management. Early blight appeared early in many areas, causing considerable damage. Some fields in the Brooks-Vauxhall area were sprayed with good results. Late Blight also showed up in most districts but came late and damage was not severe. A circular "Potato Blights" was released in September and used to reply to numerous enquiries and specimens submitted.

Wet weather prevented normal digging during late September and early October. The snowfall and below freezing weather starting October 8 left an estimated 15-20% of the crop unharvested. Inspected acreage increased 26% but frost damage reduced quality and yield of a better than average crop.

(b) Bacterial Ringrot

The control program was continued in established Pest Areas. Ringrot infected stocks were directed for disposal by the middle of March to prevent planting of diseased seed. Most growers co-operated well, disposing of all stocks in adequate time. Five official notices were served in the Brooks, Calgary and Edmonton areas, where action had not been taken by the deadline.

A list of available certified seed was supplied to all commercial growers. For the fourth year, growers with Ringrot were required to plant only certified seed or seed grown on a separate, approved seed plot. Most cellars were cleared and disinfected before seed supplies were moved in. Basic precautions are proving their worth i.e. the Edmonton area had only 2 repeaters in 1959.

The 1959 Ringrot field survey began on August 24 with 14 inspectors employed. Wet weather in most areas and light frost at Calgary hampered inspections. In all areas, doubtful cases were re-inspected.

The following table shows the potato situation and survey results, with 1954-58 results included for comparison purposes:

RESULTS OF THE RINGROT SURVEY BY PEST AREAS FOR 1954-1959

Pest Area	Year	No. Farms Inspected	No. Farms Diseased	Acreage Inspected	Acreage Diseased	% Diseased Farms	% Diseased Acreage
Lethbridge	1954	276	17	3,911	144	6.2	3.7
	1955	285	47	4,500	1,111	16.5	24.7
	1956	261	45	5,173	1,401	17.2	27.1
	1957	247	63	4,826	1,280	25.5	26.5
	1958	234	65	5,108	1,091	27.8	21.4
	1959	208	35	6,749	1,165	16.9	17.3
Calgary	1954	87	0	271	0	0	0
	1955	68	9	308	44	13.2	14.2
	1956	50	6	300	27	12	9
	1957	34	1	162	1	2.9	.6
	1958	35	4	253	36	11.4	14.2
	1959	41	9	353	100	22.0	28.3
Drumheller	1957	9	0	32	0	0	0
	1958	8	0	16	0	0	0
	1959	9	0	24	0	0	0
Brooks	1954	58	7	1,131	134	12.0	11.8
	1955	56	8	1,110	151	14.3	13.6
	1956	56	13	1,222	228	23.2	18.6
	1957	43	11	1,538	285	25.6	18.5
	1958	42	5	1,486	132	11.9	8.9
	1959	36	8	1,594	196	22.2	12.3
Edmonton	1954	210	3	2,291	39	1.5	1.8
	1955	190	14	2,050	101	7.4	4.9
	1956	200	38	2,602	608	19	23.3
	1957	152	26	2,225	343	17.1	15.4
	1958	153	26	2,370	363	17.0	15.3
	1959	148	25	2,956	507	16.9	17.1
Total	1954	631	27	7,604	317	4.3	4.2
	1955	599	78	7,968	1,407	13.0	17.6
	1956	567	102	9,297	2,264	17.9	24.3
	1957	485	101	8,783	1,909	20.9	21.7
	1958	475	100	9,233	1,622	21.1	17.6
	1959	442	77	11,676	1,968	17.4	16.8

A total of 11,676 acres on 442 farms were inspected. The general tendency toward fewer growers with larger acreages continued.

The Lethbridge area showed a decrease from 65 infested farms in 1958 to 35. Percentage diseased acreage decreased from 21.4 to 17.3.

The Calgary area showed an increase from 4 infested farms in 1958 to 9. Percentage diseased acreage increased from 14.2 to 28.3. Investigation showed that 7 of the 9 growers obtained certified seed from a source which was later confirmed positive for ringrot.

No ringrot was found in the Drumheller area for the third consecutive year.

The Brooks area showed an increase from 5 infested farms in 1958 to 8. Percentage diseased acreage increased from 8.9 to 12.3.

The Edmonton area showed a decrease from 26 infested farms in 1958 to 25. Percentage diseased acreage increased from 15.3 to 17.1.

In the over-all picture there was a decrease from 100 infested farms in 1958 to 77. Percentage diseased farms decreased from 21.1 to 17.4 and percentage diseased acreage from 17.6 to 16.8. In several cases where small fields without permits were picked up, infection ran as high as 50%. However, in the majority only trace infections were found—often 1 or 2 plants in large fields. Thus, in the main, the objective of preventing farm losses and spread to new growers was achieved.

Disinfecting facilities, provided by the Department at low cost, were in good demand. High pressure sprayers operating out of Edmonton and Lethbridge disinfected 64 cellars plus machinery and equipment. All growers with Ringrot infection were contacted by mail and personal visit several times. The Supervisor, his Assistant and 2 Fieldmen operating out of Edmonton and Lethbridge interviewed all cases to advise and assist with control measures. The circular "Bacterial Ringrot Control", new publication No. 137, "Potatoes in Alberta", disease charts and other information were distributed to all commercial growers.

The co-operation and assistance of Plant Protection Service and Plant Pathology Laboratories, Canada Department of Agriculture, in seed field survey and diagnostic service, are hereby gratefully acknowledged.

LIVESTOCK PESTS

Cattle Grubs and Lice

Stockmen showed considerable interest in new livestock systemic insecticides. During the spring, grub counts were taken on 12 herds that were test sprayed with Co-Ral the previous fall in 12 districts, to obtain data under farm conditions. Results were tabulated and distributed. The tests indicated that louse control was excellent in all sprayed herds and that earlier fall treatment was superior for warble control. Results varied from 29% control for November spraying to 98% for early October spraying, with an average warble control for the 12 herds of 78.6%. No undesirable side effects were noted.

During the fall, 35 cattle spraying demonstrations were conducted throughout the province in co-operation with the Canada Department of Agriculture and two commercial firms. The demonstrations outlined proper use of high-pressure sprayers and new systemics, and were attended by 1,115 persons. Seven herds were sprayed in the County of Thorhild No. 7 to field test a new systemic, called Ruelene. Agricultural Service Boards conducted 127 demonstrations and 728 herds with 34,900 cattle were sprayed for warbles and lice. Publication 98 "Warble Fly Control" and Publication 73 "Louse Control in Cattle" plus other timely circulars and posters were distributed. The pest control division co-operated with the Alberta Livestock Protective Society in a warble control display at the Edmonton and Calgary Spring Sales.

The Forestburg Warble Test Project was established, during the fall, in co-operation with the Lethbridge Research Station and the Municipal District of Flagstaff No. 62. The objective was to treat all cattle within an area approximately 15 by 20 miles, with livestock systemic spray, for a 3 year period, to determine the effect on warble and cattle louse populations and to obtain other basic information on the biology and habits of cattle ectoparasites and their effective control. The Hastings Coulee and Pleasington Cattle Spraying Associations have undertaken to spray about 6,000 cattle on some 200 farms in the area. Three chemical firms are supplying most of the Co-Ral and Ruelene systemics, used in the project. The area was surveyed and organized for farmer co-operation with considerable assistance from the local District Agriculturist and Field Supervisor. The early October snow and unharvested crop situation seriously hampered operations but despite this over 5,000 cattle were sprayed by mid-December. It is planned to complete treatment of all cattle toward spring as the weather warms but before warble grubs drop.

Magpie Control

To meet increased demands, an effective, economical and safe method of control of magpies was demonstrated in 40 districts and municipalities in 1959. Regulations under the Setting of Poison Act were drafted and approved for use of persons wishing to control magpies. Later an amendment was passed shortening the winter poisoning period and widening the safety margin to beneficial birds. Several control methods were outlined in bulletin No. 120. Farmers and stockmen who adopted approved magpie control methods reported, in most cases, excellent control.

Coyote Control

During 1959 the following approved poisons were supplied free of charge for coyote control in the settled areas of the province:

(a) Cyanide—in the form of "coyote getters".

(b) Strychnine—as special pellets, each containing 2 grains of strychnine.

(c) Sodium Fluoroacetate—known as "compound 1080" and used in preparing meat baits.

All settled areas of the province have requested and been approved as districts which can use coyote getters and strychnine pellets. A total of 87 districts, including Counties, Municipal Districts, Special Areas and one Indian Reserve, have been approved under the Coyote Control Policy. These receive supplies for the setting out of coyote getters and strychnine pellets.

Since 1951, when the Department undertook the control of coyotes in the settled areas, a total of 41,430 coyote getters, 112,270 cyanide cartridges and 828,500 strychnine pellets have been distributed by provincial and municipal pest control officers. Cyanide guns are now being used to only a very limited degree. Since their unused presence on farms constitutes a safety hazard, the Department has undertaken to recall all unused getters in the province. The use of 1080 baits has discontinued temporarily in some districts, decreased in others, and increased in a few where coyote damage has worsened. The following table shows the amounts of major coyote control materials supplied since 1951, as well as estimated coyote kills by the three poisons.

	Coyote Getters	Cyanide Cartridges	Scent (2 oz. jars)	Strychnine (Pellets)	Estimated Coyotes Killed
1951	5,560	11,510	1,050	....	8,400
1952	4,530	12,460	1,350	....	12,300
1953	18,800	46,030	8,120	116,000	56,300
1954	5,410	20,110	7,370	192,000	62,100
1955	4,080	10,990	6,340	195,500	57,200
1956	1,580	5,000	3,330	124,500	50,500
1957	830	4,140	2,310	76,000	41,000
1958	400	1,230	1,340	58,500	34,900
1959	240	820	1,330	66,000	32,700
Totals	41,430	112,270	32,540	828,500	355,400

Coyote control was continued in areas outskirting settlement. Six (6) provincial Pest Control Officers were fully employed during the winter in Improvement Districts. During the summer period, 16 provincial officers worked on coyote control along with other duties. Coyote control continued at a high level in most regions, as indicated by the amount of materials used and estimated kills.

The poison 1080 was restricted to sparsely settled regions and to open areas in more heavily populated districts, where poisoning could be carried out effectively but with maximum safety to the public. As requested by Municipalities and approved by the Minister, the following 1080 baits were prepared and set during the winter season:

District	No. Baits Set	District	No. Baits Set
M.D. of Bonnyville No. 87	9	M.D. of Wheatland No. 40	28
M.D. of Cardston No. 6	31	M.D. of Willow Creek No. 26	10
M.D. of Flagstaff No. 62	32	County of Athabasca No. 12	17
M.D. of Foothills No. 31	19	County of Beaver No. 9	9
M.D. of Kneehill No. 48	16	County of Forty Mile No. 8	24
M.D. of Lacombe No. 64	13	County of Newell No. 4	7
M.D. of Leduc No. 75	9	County of Thorhild No. 7	15
M.D. of Lethbridge No. 25	10	County of Vulcan No. 2	9
M.D. of Mountain View No. 49	6	County of Warner No. 5	11
M.D. of Paintearth No. 53	16	I.D. No. 11	38
M.D. of Pincher Creek No. 9	9	I.D. No. 22	16
M.D. of Provost No. 52	2	I.D. No.'s 27, 46 & 50	16
M.D. of Red Deer No. 55	28	I.D. No.'s 58, 65 & 68	36
M.D. of Smoky Lake No. 89	13	I.D. No.'s 77, 78 & 95	17
M.D. of Smoky River No. 130	8	I.D. No.'s 85 & 101	5
M.D. of Spirit River No. 133 & I.D. No. 134	4	I.D. No. 102	14
M.D. of Stony Plain No. 84	11	I.D. No. 107	15
M.D. of Strathcona No. 83	2	I.D. No. 122	2
M.D. of St. Paul No. 86	17	I.D. No.'s 124, 125 & 126	13
M.D. of Taber No. 14	13	I.D. No. 139	3
M.D. of Vermilion River No. 71	12	Special Areas No.'s 2 & 3	26
M.D. of Wainwright No. 61	11	Total Baits Set	632
County of Wetaskiwin No. 10	10		

A total of 72 districts, including Counties, Municipal Districts, Special Areas, Improvement Districts, Indian Reserves, etc. are now approved as areas where 1080 may be set. Some areas have experienced very good control and thus discontinued baiting for one or more seasons. The following table of the 1080 Program shows a comparison of sets, districts using and approved areas, dating back to 1951 when 1080 was first tested in the province:

	1951	1952	1953	1954	1955	1956	1957	1958	1959
No. of Sets	50	143	184	387	387	753	778	749	632
No. of Districts Using	2	11	13	19	28	40	47	50	55
No. of Districts Approved	2	12	15	19	30	43	57	68	72

The table shows an increase in the use of 1080 poison baits until 1957, followed by a decrease in 1958 and a further decrease in 1959. The Supervisor, his Assistant and three Fieldmen, working out of Edmonton and Lethbridge, serviced 55 districts using 632 baits in 1959.

RODENT CONTROL

Pocket Gopher

Crop damage, especialy in the black and transition soil zones, continues to increase. Alfalfa fields appear to be hardest hit. Bulletin No. 124, based on proven control methods, was written, distributed, and was followed up by field demonstrations in 4 municipalities from Lacombe to Pincher Creek. A total of 760 poison bait sets were put out at several locations.

A brief fall damage survey, in the Edmonton area, indicated extensive damage to forage crops.

Columbian Ground Squirrel

Farmers and ranchers in south-western Alberta co-operated with Department fieldmen to continue testing of safe and efficient controls on this pest. Surveys indicate that the rodents are moving down the foothills slopes making deeper penetration of croplands.

Controls demonstrating the use of strychnine on grain baits were set out in the Pincher Creek and Fort Macleod ranching area with encouraging results.

Norway Rats

The rat infestation situation has improved greatly, from last year, in the border area north of the North Saskatchewan River. Infestations which covered a wide area from Onion Lake to Cold Lake were virtually eliminated. Very few re-infestations have occurred. Elsewhere on the rat front, from Medicine Hat to Lloydminster, rats are still being confined to Ranges 1 and 2 with only an occasional colony in Range 3. One section of the border area has a consistently low incidence of rat infiltration. This is occasioned by the fact that Saskatchewan residents adjacent to this section of the border have initiated a rat extermination campaign. Continued interest and co-operation on the part of Alberta residents is indicated by their ready willingness to support the provincial extermination campaign. An increasing number of premises have been cleaned up, rat proofed, and rat food and harbourage removed. In the few cases where action was not taken, 4 Notices to Control were issued. No court action was necessary.

The following table shows the rat situation as at December 31, 1959, with 1957-1958 results for comparison purposes:

	Year	Verm. R. M.D. 71	W'right M.D. 61	Provost M.D. 52	Sp. Areas No. 2 & No. 3	Acadia M.D. 34	I.D. No. 11	I.D.'s 85 & 101	Totals
Farms Checked	1957	891	373	415	522	161	358	....	2,770
	1958	1,441	391	550	563	174	390	265	3,774
	1959	1,411	363	604	567	177	417	462	4,001
Farms Infested	1957	7	2	6	26	8	17	....	66
	1958	16	0	3	11	5	11	10	52
	1959	4	0	0	6	1	6	0	17
Farms Infested but Exterminated	1957	130	56	77	74	33	106	....	476
	1958	159	30	76	97	37	148	80	585
	1959	88	10	27	56	34	89	73	377
Farms Exterminated but Re-infested	1957	7	3	6	0	4	7	....	27
	1958	1	0	3	0	1	8	10	23
	1959	0	0	0	1	0	6	0	7

A total of 394 farms were infested during the year and all but 17 were exterminated. Remaining infestations consisted of very few rats, usually 1 or 2 where they occurred. Re-infestations dropped considerably, partly owing to the fact that more permanent bait stations have been maintained in Ranges 1 and 2. Also, the increased activity in rat suppression by residents east of the border has prevented many rats from getting through to Alberta.

The main control measures have been the use of Warfarin and Pival poison baits as well as carbon monoxide gassing. During 1959 the following poisons were supplied free of charge to residents of the rat area: Warfarin Ready Mixed Bait—21,300 pounds, Warfarin and Pival Water Soluble—10,550 packages (making 10,550 quarts of bait). Improved bait formulations are still highly effective and were taken in greater quantities than in previous years. A conservative estimate, based on average rat infestations and amounts of poison used, indicates that over 52,000 rats were killed during 1959.

Approximately 250 pest control officers have been appointed by rural municipalities, cities, towns and villages. These men handle local rat reports and their services are invaluable to the campaign. Two full-time provincial Pest Control Officers supervised the border area, working closely with municipal pest control officers and farmers. The Department grant of 50% toward the salaries and expenses of municipal pest control officers in the Municipal District of Vermilion River No. 71, Municipal District of Wainwright No. 61, Municipal District of Provost No. 52, Special Areas 2 and 3, Municipal District of Acadia No. 34 and Improvement District No. 11 was increased to cover higher cost of operation and continued. These men made farm to farm checks, demonstrating and applying preventive and control measures. The excellent co-operation received from the Department of Indian Afairs and Metis Rehabilitation Branch played a large part in eradicating rats discovered on Indian Reserves and Metis Colonies of north-eastern Alberta in the fall of 1958.

The annual meeting of provincial and municipal officials was held at Llyodminster to review the rat situation and to plan the future control campaign. Three public meetings were organized with rat control as the main topic discussed. Seventy-two (72) people attended these meetings. In addition 8 displays and demonstrations were conducted during summer fairs, at zoos, and at other public gatherings. Four rat films, numerous colored slides, live and mounted specimen and control materials were displayed at various meetings. Pest control officers were supplied with rat control kits, mounted rat specimens, posters and two printed bulletins for public distribution. Twelve (12) rat reports were investigated at points other than along the border.

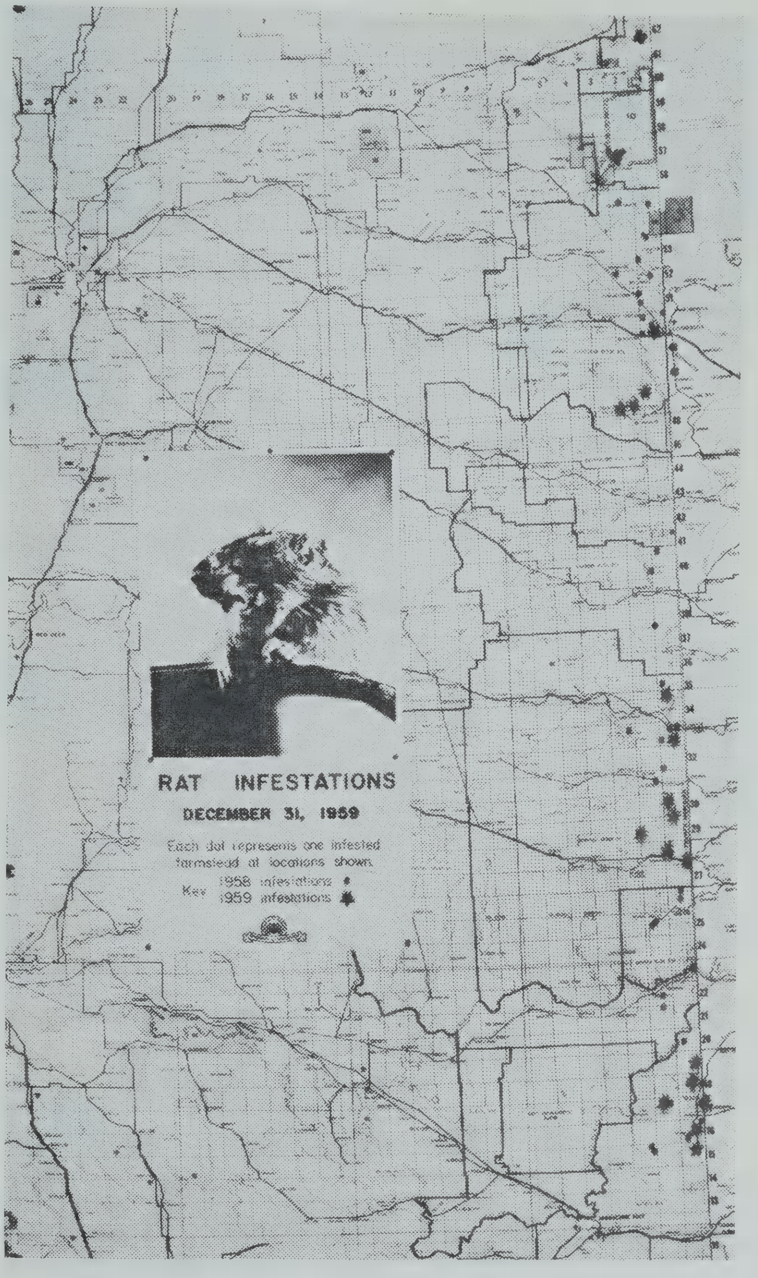
The animals commonly referred to as Mura, and formerly securely housed at Scapa, were voluntarily exterminated by their owners. Disposition of the animals was witnessed by representatives of the Field Crops Branch and the Fur Farms Branch.

Pest Control Advisory Committee

The third annual meeting of this committee was held in December with representation from the Canada Department of Agriculture, the University, the Fish and Wildlife Branch and the Field Crops Branch. During the year, the Predator, Wildlife and Conservation Sub-committee was formed with representation from Canadian Wildlife Service, Ducks Unlimited, the University, Department of Lands and Forests and the Field Crops Branch. Two meetings were held in April and November. Various problems of mutual concern were dealt with by both committees. The Supervisor and his Assistant served as secretaries for the Committee and Sub-committee respectively.

Miscellaneous

The Supervisor and his Assistant spoke at 23 meetings, short courses and field days. Six Agricultural Service Board and Municipal District Council meetings were attended on various pest control matters. Judging was done at three 4-H achievement days. Three weeks were spent on Bacterial Ringrot Survey. Displays and demonstrations on control of various pests were held at 34 fairs or meetings. Eighteen articles were prepared for Farm Notes and 14 radio interviews made. Thirty-three conferences and committee meetings were attended. A total of 310 specimens of insects, plant diseases, animals and other problems were identified or diagnosed. There were 347 field investigations made on various problems.



HORTICULTURE

Horticulture Services

In 1959 Alberta farmers planted 1,735,200 trees. The total was made up of 1,468,475 from Provincial Nurseries and 266,725 from Federal Stations. This is a decrease over 1958 of 18,301. The number of farmers receiving trees was 2,507; 2,123 receiving their trees from Provincial Nurseries. This was a decrease of 170 from 1958.

The two Department mechanical tree planters were used again for demonstration purposes. Because many Alberta municipalities now have their own machines the demand for the Government ones has decreased. 738,587 trees were planted for Farmstead Shelterbelts, 465,155 were used for Field Windbreaks and 251,393 planted along roadsides for beautification and road protection.

1959 was generally a good year for trees. Although the spring and early summer were warm and dry in some areas moisture was adequate over most of the province to enable the trees to get started. The above average rainfall later in the growing season ensured the trees making good growth and going into winter in excellent condition.

Tree Nursery—Oliver

1,303,885 trees and 140,940 hardwood cuttings of poplar and willow were supplied to 2,123 farmers from the Oliver Nursery. This is an increase of 127,415 trees over 1958 and 213 in the number of applicants receiving trees from this Nursery.

An inventory of trees on the Nursery at the end of the year included 3,731,413 evergreens and 2,197,965 decidous trees. In addition to these 5,929,425 trees the Nursery Staff made 265,000 hardwood cuttings of poplar and willow.

The Nursery employs a Staff of four permanent men. In the summer seven extra men are hired plus four patients from the Oliver Hospital. Thirty-eight extra men and women were hired at shipping and transplanting time. Three hundred hours were spent cleaning out old windbreaks at the Provincial Poultry Plant.

6,000, 2-0 spruce were supplied to the Parks Department, City of Edmonton, to be distributed to Grade One pupils in the Edmonton Public and Separate Schools. 5,000 surplus Green Ash were given to the City of Calgary for distribution to Community Parks in Calgary. The Attorney-General's Department received 4,000 trees for planting at the Provincial Gaol, Calgary, and the Belmont Rehabilitation Centre, Edmonton. 1,600 trees were supplied to the Department of Lands and Forests to be planted at Provincial Parks throughout the province. 2,000, 2-0 spruce and pine were supplied to the Eastern Rockies Forest Conservation Board for experimental purposes. 2,000 evergreens were supplied to North-West Pulp and Power, Hinton, for experimental work, 1,219,050 trees have been lifted and heeled in for shipping in the spring of 1960.

Seed of the following varieties was collected, extracted and cleaned, Colorado and White Spruce, Villosa Lilac, Tartarian Honeysuckle, Green Ash, and Manitoba Maple. An enlarged program of gathering evergreen cones by the Department of Lands and Forests has resulted in the Nursery receiving and cleaning 3,500 bushels of cones. This has resulted in 2,000 pounds of seed having a value of more than $15,000.00. This work will be continued through the winter.

The following new equipment and buildings were added to the Nursery, one double disc, one electric motor, one seed cleaner, one new kiln for drying evergreen cones, one new truck, and a new crew room providing an office and rest rooms for the Nursery Staff.

Two hundred seed beds were built or repaired and painted. 300 yards of gravel were spread on the Nursery roads and the Department of Highways supplied 200 yards of black soil removed from road ditches and used on the Nursery to fill low lying areas.

There was no serious outbreak of insects at the Nursery although the larch were sprayed with Malathion to control an attack of Larch Sawfly.

Chemicals were used to spray 50 acres twice to control weeds in the transplant beds and this reduced the amount of hand weeding to a minimum. The weeds in the rest of the Nursery were controlled by intense cultivation.

A small trial to determine the best time to plant hardwood cuttings on the Nursery in order to get the best size for shipping was carried out. 1,800 hardwood cuttings of Russian poplar were used. 200 were planted at weekly intervals from the third week of May to the end of July and germination and growth performance recorded. The ones planted June 8th gave the best size for shipping. This trial will be repeated in 1960.

Other Activities

The Supervisor of Horticulture addressed 19 public meetings. In addition he spent time in 20 District Agriculturists' areas assisting with farmstead planning, pruning demonstrations, tree planting and other Horticultural matters. He acted as judge at five Horticulture Bench Shows and assisted at 11 4-H Gardening, Grain and Potato Achievement Days. He attended two Executive meetings and the Annual meeting of the Alberta Horticultural Association and attended 11 monthly meetings and 5 Executive meetings of the Edmonton District Planning Commission. He is a member of the White-mud Park Committee and attended two meetings. Three radio talks were given on the Department's program "Call of the Land" and two appearances were made on T.V. produced by the Edmonton station. Twenty press releases on topical subjects were published in the Department's weekly release "Farm Notes". 74 trips were made to the Oliver Tree Nursery and 3 trips to southern Alberta to attend meetings regarding special crops for irrigated areas. 16 visits were made to the University proof reading Horticultural publications and discussing other matters of mutual interest.

Horticultural Advisory Board

This Board appointed by the Minister of Agriculture, is composed of representatives of the Field Crops Branch, University of Alberta, Research Stations of the Canada Department of Agriculture and the Canadian Nurserymen's Association and the Alberta Horticultural Association. The Board meets once a year and is charged with the responsibility of recommending to the Minister regarding all matters pertaining to Horticulture.

Alberta Horticultural Association

The Association held its 7th Annual Meeting at Olds on April 17th. The fifth Provincial Show was held in Medicine Hat on August 14th and 15th in conjunction with the Annual Bench Show of the Medicine Hat and District Horticultural Society. The Executive met at Medicine Hat and Edmonton.

Nursery Inspection

In co-operation with personnel of the Canada Department of Agriculture the Supervisor of Horticulture inspected 14 Commercial Nurseries. The inspection is carried out each year to check the Nurseries for diseases and insects. Particular attention is paid to imported stock. As a result of this inspection, the Department in co-operation with the other Prairie Province, publishes a list of Prairie Nurseries.

Potato Production Improvement Committee

This Committee, appointed by the Horticultural Advisory Board, is composed of potato growers from all Commercial producing areas of the province and Government personnel interested in potato production. It has the responsibility of assisting and advising the potato industry in the province and acting in an advisory capacity to the Horticultural Advisory Board. Two meetings were held in 1959, the Annual meeting in Calgary in March and a second in conjunction with a Field Day held at Edmonton in early August.

Tuber Indexing of Foundation Seed

The service of indexed foundation potatoes was continued jointly by the Field Crops Branch, the Brooks Horticultural Station, the University of Alberta and the Canada Department of Agriculture. 1,937 tubers, an increase of 416 from the previous year, were grown in the greenhouse at the Brooks Horticultural Station and disease readings taken early in April by the Plant Pathologist. 91.05% of the tubers qualified as suitable for production of foundation seed. 1.9% showed slight mosaic, 4.7% were weak, 2.2% were missing and 0.05% showed Haywire.

Seed Potato Production

The following table is an 8-year summary relative to seed production in Alberta.

	1952	1953	1954	1955	1956	1957	1958	1959
No. of Growers	81	86	70	67	72	65	61	68
No. of Fields Inspected	177	200	223	228	220	222	203	266
Acres Inspected for Cert.	702	942	1,022	1,004	1,328	1,577	1,615	2,070
No. of Fields Rec. Cert.	163	168	198	214	186	188	172	236
Acres Passed for Cert.	578	844	905	965	1,129	1,272	1,300	1,716

REPORT OF THE HORTICULTURAL STATION

BROOKS

Administration

New horticultural crops are usually the result of long and patient efforts. When they are recognized as part of agricultural production, one or two generations of workers have played a part in their development and introduction. During the past year introductions from this Station, some of which date back to the early years of its work, have been recorded in print in international variety lists, catalogues and in arboretum recommendations. Named and listed with a synonym is Strathmore (Pillar of Fire) Crabapple, by the Morton Arboretum and the American Nurseryman. Griffin poplar appears in the Guides and catalogues of Western Canada and is finding a place as an accent tree in landscaping and for narrow, high shelterbelts. The plum "Sapalta" has replaced "Sapa" in the commercial plantings in Minnesota. Johnny Jump-Up is listed in Hepler's catalogue, of Maine, and described by Yeager as—"a tomato which I believe to be the earliest of any tomato."

The "Brooks Sandcherry" has long been the standard of quality. Finding its place with Heyer No. 12 is the small dessert apple, Brooks No. 27; and considered for naming are the two crabapples, Brooks No. 10 and Brooks No. 22.

Two new tomatoes will be introduced to the trade. They are BV 132-2109 (Globe Trotter) and BV 132-2022.

In the seedling fruit orchards a promising plum selection was noted. It is an Ivanovka seedling, number 58, in row 18, orchard 9, and is being propagated for extensive trials.

Tree seed crops returned their first large harvest and the grounds and shelterbelt plantings showed to advantage during the past season.

Staff changes were brought about by the retirement of N. J. Daley, the farm foreman. Mr. Yves Faure, fruit specialist, tendered his resignation upon accepting the position of Parks Superintendent for the City of Medicine Hat. Projects with under-stocks and weedicides were set aside when John Van Loon returned to Macdonald College for post-graduate studies. A general maintenance and repairman, G. W. L. Nelson, was added to staff.

Changes in wage rates during the year, and the implementation of a 40-hour week, increased labor charges by 34%, causing some radical adjustment in farm routine so that normal operations could continue.

Station staff attended 25 farm meetings, including 4-H, Garden Clubs, and Horticultural Societies. Judging was undertaken at five Shows. Some 25 calls were made to growers of vegetable crops and others with special landscape and horticultural problems. Landscape plans were prepared for 23 farm homes, including the new development at Enchant, and the Rockyford Park.

The Station was host to a number of visiting groups, including the Michichi Beef Club, Cluny Calf Club, Youngstown and Rolling Hills 4-H Clubs, Blackie Garden Club, Medicine Hat Horticultural and Camera Club, Brooks Sketch Club, and the Tilley Lutheran Church Group.

A total of 1,714 personal calls were made at the Station for discussion and advice on horticultural problems.

At the Medicine Hat Horticultural Exhibition on August 15th, a display consisting of fruit, vegetables, and flowers was staged. Throughout the year floral displays were made for the following groups: the Agricultural Short Course, Fashion Show, Brownie Achievement Night, Home and School meetings and the Brooks and Duchess High School Graduation Nights.

Climate

The growing season is reported in two ways: first as the season during which plants grew without frost injury—139 days free of killing frost between May 13th and September 29th, and second, as a frost free period of 107 days between May 25th and September 9th. The winter of 1958-59 was long but "open" with below normal snow cover. Winter damage occurred in the tree fruits and raspberries with heavy winter killing in the alfalfa crop. Extreme cold weather, of very sudden occurrence on January 1st, was likely the main cause of woody and herbaceous plant injury. There was snow cover between January 13th and March 14th and in the second half of November, with some changeable snow cover in December and the first half of January. The extreme low temperature was –28°F in February. The extreme high was 93°F in July.

Although precipitation for the year was below normal (11.71 inches) the precipitation for the growing season totalled 7.6 inches, resulting in a reduction in irrigation. A summary of meteorological conditions appear in the following table:

Month	Max.	Min.	Mean Temps. Max.	Mean Temps. Min.	Mean Temp.	Precip. in Inches	Hours of Sunshine
January	45	–26	12.8	–5.4	3.7	0.83	86.7
February	44	–28	18.0	–7.2	5.4	0.79	166.4
March	59	14	42.3	25.0	33.6	0.08	161.7
April	73	0	54.3	26.9	40.6	0.89	225.9
May	83	24	60.5	33.5	47.0	1.70	268.7
June	86	40	72.9	46.9	59.9	2.20	287.4
July	93	42	80.9	52.1	66.5	1.44	368.4
August	90	41	73.2	43.6	58.1	1.67	296.4
September	88	22	63.4	40.4	51.9	0.60	159.7
October	74	10	50.7	37.4	39.0	0.65	127.6
November	57	–19	34.1	13.4	23.7	0.84	110.1
December	57	2	38.3	16.6	27.4	0.12	94.1

Propagation and Distribution of Trees and Shrubs

The open fall of 1958 allowed digging of the shipping material, and the majority of lining-out stock, for the following spring. This was a decided advantage in spring shipping, seeding and planting.

Collecting of poplar and willow cuttings began March 31st. Owing to the dry fall and winter these cuttings were not a success. Parallel failure was in evidence throughout the province.

Tree planting and the collecting of scion wood began on April 6th. Many growers prefer to do their own fruit tree propagation and thirty lots of scion wood were shipped to fill requests.

On April 7th, heeled in trees and shrubs were taken to the root-cellar to be prepared for shipping. The first shipment, consisting of 29,000 Green Ash, which were surplus trees, went to the Dominion Tree Nursery, Indian Head, Saskatchewan. Other large shipments were—2,000 Manitoba Maple to the Calgary Parks Department; 900 Maple, Rose, Dogwood, Honeysuckle, and Lilac to the Department of Public Works, Calgary; 500 Douglas Fir to the Eastern Rockies Forest Conservation Board; and a collection of 3,000 plants to the Bowden Institution. A slight decrease showed in the number of applicants for mixed bundles of shelterbelt material. The total number of requests was also down from the previous year. This may be due to the amount of material sent to Oliver and distributed from there. This consisted of 4,525 lilac, 10,350 poplar, 12,600 willow, 9,500 Manitoba maple, 100 Rocky Mountain juniper, and 47,000 willow cuttings. In all 218,000 trees and shrubs were shipped, including 4,000 poplar and 55,000 willow cuttings. Shipping was completed on May 12th.

Seeding started in the lath house on April 13th but was delayed due to snow and frost from April 23rd to May 5th. Seeding in the lath house was completed on May 20th, and field seeding was finished on May 15th.

Irrigation by the sprinkler system in the seed frames began on May 15th and ran steadily until October 23rd.

Setting out of poplar and willow cuttings began on June 2nd. As this project proved unsuccessful a plastic greenhouse was built to accommodate greenwood cuttings of the above. Further trials will be made to estimate it's suitability.

The budding season started on July 29th with plums and on August 4th with apples, finishing on August 7th. There was a heavy demand for budwood from Experimental Stations and Nurserymen.

Digging of nursery stock in the field started on October 15th and in the lath house on October 19th. All plants which could be heeled-in successfully were dug. On November 9th a selected number of trees and shrubs were put into storage in the root-cellar to test the feasibility of storing all shipping material inside. If successful, this will eliminate the heeling-in system of winter storage.

Eighty per cent of the tree seeds required for our propagating program are now grown on the Station. A total of 900 pounds was seeded last spring, most of the coarse seed being seeded in the field.

With 3,000 grafted fruit trees on hand the heavy demand for this stock should be filled.

Maintenance

Buildings—Major roof repairs, undertaken by the Department of Public Works, has placed all roofs in excellent repair. Stacks and drains were raised. A furnace was installed to heat the lecture room and the three adjacent bedrooms. Now available for use is a fume cupboard in the laboratory.

A private office for the assistant superintendent, Mr. Thos. Kilduff, has been partitioned off the main office and furnished. The Station residence and staff house have been repaired outside and the latter is being re-decorated inside. Other improvements are the changing of heating pipes in the hotbeds, installation of a priming pump on the main water supply pump, construction of a plastic greenhouse and a compost bin for preparing greenhouse soil.

Machinery—Station machinery is in good repair and reasonably adequate. During spring and summer, when weed problems are most pressing, the need for an additional tractor for weed control is constantly felt.

Machinery replacements during the year were: the John Deere horse-drawn manure spreader replaced with a Minneapolis Moline power-driven spreader; the Universal manure loader and booster buck replaced with a farmhand F11 manure loader with hay basket attachment; the Massey-Harris 5-foot mower replaced with a 9-foot John Deere mower; the Lawnboy mower replaced with a Toro lawn mower; the Farmcrest roto-tiller replaced with a Choremaster tiller. Additional irrigation equipment was purchased. More adequate ditches and structures were made for filling the water reservoir which has greatly improved the domestic water supply.

Roads and Parking Areas—Road gravelling was done in the early spring on the roads around plots 6, 8, and 10 east and south of the main building. An area adjacent to the main building was gravelled for improved parking facilities.

General Farm Work—Many improvements have been made since the first plant materials were moved in 1951. Arable areas consist of 243 acres, in a total area of 301 acres on the Headquarters farm; and 108 acres on the East Station. Alkali and drainage are major problems. The most alkaline areas have been planted to resistant grasses from which a seed crop was harvested. In areas where alkali is not so severe, crops of Sweet Clover were grown and plowed under. This practice has given good results, but will have to be continued for several years before the problem is overcome.

The East Station is gradually diminishing in importance as more tree stocks are re-established on the new Station. The easterly part is still planted to horticultural crops with the remainder down to grass, alfalfa, and tame pasture. Some orchards are still in use, although damage by the public greatly reduces their value. Oat, potato, and hay crops were greatly reduced by the early killing frost, while the tree seed crop suffered from a spring frost at blossom time. Farm areas planted and their yields are as follows:

Headquarters—143 acres in trees and shrubs
12 acres in forage crops (seed)
55 acres of summerfallow
20 acres of oats—656 bushels
2 acres of rye—100 bushels
2 acres of potatoes—2 tons
9 acres of grounds

East Station—66 acres of orchards
10 acres of alfalfa—17 tons
20 acres in tame pasture
5 acres of potatoes—7 tons
7 acres of summerfallow

Forty-five acres were levelled to improve irrigation and rye was plowed down to improve the soil. All crop and levelled areas were manured this fall. Although the feed yard contract supplied a considerable quantity of manure, more could be used. Fencing has been completed along the west boundary of the new Station.

Trees and Small Fruits

Apple and plum trees in the Co-operative Fruit Breeding Projects, started in 1953, number 11,359. Seedlings grown from 1953 until the present total 27,374. In the last year 2,065 trees were culled. Older orchards were severely damaged by fire-blight and chlorosis, and the amount of winter killing was above normal. Late frost in the spring of 1959 extensively injured the tips of the trees and fruit buds. While 248 apple trees produced fruit, 48 for the first season, six only were considered to be satisfactory and have been selected for special attention. Data was recorded on the 1957 plantings for the first time, while the oldest trees have yielded four years of data.

The 55 named varieties of fruit trees received in 1958 were well established. Sixteen selections of currants, gooseberries and raspberries have been added to the trial plots.

The apricot orchard did not fruit and only four trees in the apple varietal trial orchard bore crops. This was, in part, due to frost during blossom.

In the plum seedling orchard 86 different trees were marked because of earliness, fresh fruit quality or high cooking scores. Fruit of one Manchurian plum tree was outstanding both fresh and processed. Scion wood of the best trees was gathered to be used this winter for gratfing.

The rodent control program is well under way and shows good results. A mixture of Arasan S-F-M with an asphalt-water emulsion proved effective during the 1958-59 winter season. Tests are continuing with repellants.

Raspberry varieties suffered some tip killing but fruited well, 28 varieties being harvested and processed for consumer preference tests. Outstanding varieties were Honeyking, Madawaska, Latham, Chief, and Rideau. Fruit from 35 raspberry seedlings was tested for fruit quality and all inferior stock culled from the plantings.

Strawberry varieties planted last year failed to become established because of highly alakaline soil conditions. The rhubarb plot laid out in 1958 is a well established clone from one resistant seedling, from a strain of McDonald that showed resistance to Red Leaf disease.

Potato Trials

Thirteen varieties entered in the Prairie Regional Trial were grown and harvested in good condition. In order, the five highest producers were: F5025, Fundy, Norland (ND2906-1R), F4768, and Avon. Participation in the Prairie Adaptation Trial involved the planting of 175 seedling selections. Of these 58 were received from Scott Experimental Farm, 50 from Fredericton, and 67 were Brooks selections. Data from the above trials has been compiled and reported to the National Potato Committee.

Twelve varieties were grown in the Varietal Trail. Of these Norland and Delus were outstanding. Ten varieties and 60 seedlings were grown in the Early Yield Test. The Waseca, USDA 135.49-3-5, Warba, and Norland rated highest in order. A number of seedlings showed greater yields than the named varieties.

Potato Breeding—the crossed seed sown and transplanted in the greenhouse in August produced 8,722 seedling plants. These were harvested in late December.

Seven thousand two hundred and eighty-seven 1958 seedlings were field planted last spring and 196 selections made for further testing. Seedling selections from 1954, 1955, 1956 and 1957 were also grown. Re-selection has left six of the 1954, twenty of the 1955, six of the 1956, and twenty-nine of the 1957 seedlings to be grown along with the 196 selections of 1958.

Ten Station introductions are being processed in the Prairie Adaptation Trials.

Tuber Indexing—During the winter, 1,887 tubers submitted by 14 growers were indexed in the greenhouse. The technique and procedure used in carrying out this screening program were essentially the same as followed in previous years. The disease readings were taken on March 20th. Results obtained in 1959 were very good. Of the total indexed tubers 91.05% were returned to the growers as disease free and 8.95% were discarded.

Vegetables

Trials—Forty-two kinds of vegetables were grown last season with a total of 414 varieties. Yield data was recorded. These accumulated data serve as the basis for our recommendations in the biennial revision of the Alberta Horticultural Guide.

Tomato Breeding—Plantings were made from crosses and selections of material originally started in 1948. From 64 selections, 9,872 plants were grown and from these, forty-eight selections were made. Two selections are now ready for introduction. Both of these are from the Alred × Gloche Wonder cross. They are—

BV132-2109 is the sixth generation (F_6) from the cross. The plant habit is determinate, slightly on the indeterminate side. The fruits are smooth, large and fleshy. The color is medium red and acidity is very low. This is a heavy yielder, early and an ideal commercial variety. It is tentatively named "Globetrotter".

BV132-2022 is a sister selection from the same cross. The plant habit is determinate. The fruits set in a compact cluster, are smooth, uniform, and resistant to cracking, medium in size and dark red in color. The flesh is palatable, slightly more acid than V132-2109. It is a heavy yielder, very early and an ideal home-garden variety or for adaptation to the "tube trade".

Cabbage Breeding—Plantings made in 1959 were from seed gathered as a result of the program started in 1950. Some 1,301 plants were grown. Part of these originated from the six inbred lines and 279 heads were saved for seed production from this population. Reciprocal re-combinations between the pure lines made in 1958, had 39 families in the plots. From these, selections have been made for size, shape, color and compactness. Those that survive the winter storage period will be used for seed production in 1960.

Foundation seed was harvested from the Red Cored Chantenay Carrot and from Burbank Sweet Corn.

Ornamentals and Perennials

Progress in the ornamental plot is slow due to poor soil conditions but it is hoped this will be eventually overcome.

A shipment of ornamental shrubs and trees was again received from the Modern Research Station to fill spaces caused by winter killing. Winter rye, sown between the rows in August of 1958, was plowed under to improve soil conditions.

Approximately 90 different varieties of Lilac are now established in the plot, a collection of Berberis, and 20 varieties of Spirea. These cannot be evaluated at this early date, with the exception of the Korean Spirea, which can be recommended for landscape plantings. Another small shrub, **Potentilla fruiticosa,** the Bush Cinquefoil, brightened up dull places in the grounds during the summer months. Cotoneaster, with so many different shapes and habits from tree-growing shrubs to rock garden bushes, is very worthwhile. **Salix purpurea,** Purpleosier Willow, showed promise for landscape use. The Griffin Poplar is increasing in popularity, also the flowering crabs—Almey, Strathmore, and Jubilee.

A large collection of evergreens is being established on the Station. Mr. R. Almey, Ground Supervisor of the C.P.R. Western Division, made available to the station cuttings of 48 Junipers collected in the Banff area and established on the C.P.R. grounds at Banff. Cuttings of these are in the greenhouse propagation beds.

Perennials in the borders and beds suffered winter injury. More than 80% failed to come through the winter. Chrysanthemums killed 100%. A stock of foundation plants, stored in the root cellar, made it possible to grow a new bed of chrysanthemums at the Station grounds entrance, making a colorful welcome to visitors during the late summer and fall. A chrysanthemum selection No. 1, from Sutherland, brought to the Station four years ago, proved very reliable, being bright and colorful. One Sutherland introduction, which bloomed in August during 1958, was delayed in date of bloom until September 29th during 1959. The cool growing season possibly accounts for this retardation of maturity. The medium and late varieties Messeba, Selection 1, Red Wing, Sundance, Valiant and Cairngarm were checked severely by the frost of September 9th. Six new selections from Morden have been started for next year and 10 different selections of chrysanthemum seed are on hand for planting in the spring.

The perennial beds have been re-located and a block of 30 Lily varieties have been added to the planting. An assortment of 50 Tulip varieties were planted, which includes Double Early, Single Early, Triump, Cottage, Breeder, and Darwin types. In this planting a trial being made to assess the possible value of chemicals in controlling bulb-borne disease.

Samples of petunia selections were made available by Mr. Simonet of Edmonton for the annual flowers section. Single-Red Multiflora, Single-Salmon Red Large, Double All Mixed, Double Rose Fringed, and Double Salmon Red (M.S. 20) made a beautiful color patch on the roadside of the Station grounds. They also supplied material for the Provincial Horticultural Show in Medicine Hat. Outstanding petunias at the Station over the past few years have been Crusader, Red Satin, Blue Luster, Linda, Pale Face, Commanche and Snow Queen.

Gladiolus

The gladiolus garden was expanded to contain over 700 named varieties, comprised of about 12,000 bloom-size corms, plus increase stocks. Donation of the "hobby collection" of Thos. Kilduff enabled the setting up of a museum of varieties which will serve as a reservoir of breeding material, and as a background for assessing the performance of new introductions. Donations from the private collections of Messrs. J. H. Downs, J. G. Archibald, and Dave Allen of Lethbridge, from J. A. McKay of Brooks, and from Dr. M. W. Cormack of Saskatoon, added to the scope of this collection.

Some preliminary trials on the chemical control of corm-borne bacterial and fungal diseases were undertaken. Chemical weed control was also tried on a limited scale. Adequate build-up of corm stock in 1958 permitted undertaking a heat vernalization trial projected for several years, in which the Dominion Experimental Farm at Beaverlodge, and the Horticultural Department of the University of Alberta, Edmonton, co-operated. Prior to planting, 80 corms each of two late-blooming gladiolus varieties were held at 80°-85°F for twelve days. At all three points results were similar and clear-cut. The heat treatment advanced date of blooming from one to two weeks; on the average eight and nine days earlier than the untreated checks. Further trials with newer varieties are planned.

Herbicide Trials

A total of 5 herbicides were tried at different rates in several combinations on carrots and onions. The chemicals CIPC, EPTC, 2,4-D, and KOCN were, in the main, of the pre-emergence type. They were, under conditions of this trial, relatively ineffective. Most prevalent weeds were red-root pigweed and purslane.

Good results were obtained in the onion plots on which Shell Herbicidal oil No. 1 at 30 gallons per acre plus CIPC at 0,2,4 and 6 pounds per acre was applied (June 22nd) with a small hand sprayer. The oil killed all weeds less than 3 inches in height, and the residual effect of the CIPC maintained a clean series of plots well into mid-summer. Slight injury to the onions was apparent shortly after spraying. One month after treatment excellent recovery was noted in the 2 pounds CIPC per acre plots while the onion plants in the 6 pounds CIPC per acre plots were still very small. This pilot run served to show:

1. The potential worth of a combination of herbicidal oil and low rates of CIPC in controlling weeds in onions.
2. Some limitations of a disc-type distributor, acquired through courtesy of the Suffield Experimental Statoin, especially (a) in relation to winds, and (b) the use of oil or oil-based mixtures.
3. That timing of application may be radically upset and rendered ineffective by weather conditions, especially by strong winds and rainy periods.

Processing

A taste panel, consisting of five Station personnel, checked 175 varieties of vegetables after six months of frozen storage. They consisted of—8 varieties of Broccoli, 5 varieties of Broad Beans, 4 of Dry Beans, 23 Green Beans, 3 Horticulture Beans, 2 Marrow, 15 Peas, 5 Lima Beans, 3 Wax Beans, 14 Cauliflower, 11 Carrots, 35 Corn, 11 Peppers, 4 Pumpkin, 7 Spinach, and 2 Swiss Chard.

Of 29 Rhubarb varieties and seedlings only McDonald Sldg. B-6, Sdlg. B-9, and Early Sunshine, scored above fair. Among the 15 Raspberry varieties, Rideau scored the highest.

All varieties with high scores were recommended for inclusion in the list of Freezer Tested Vegetable Varieties, which is available to the public through the District Home Economists' offices.

The laboratory processed 138 varieties of vegetables to be tested for appearance, texture and flavour during the winter of 1960.

Twenty-three varieties of Raspberries were canned by the exhausting method in a 20% sugar syrup, and some 54 varieties and seedlings were frozen in dry sugar for test. Seventeen Rhubarb seedlings and varieties were also frozen in dry sugar. Fruit taken from the plum seedling block was cooked and sampled, with some selections being tagged for further testing.

Twelve freezer wrappings are being tested on meat with Waxed Kraft and Redwing Fibre used as the standard.

Special Crops

Commercial potato acreage in Alberta increased about 20 per cent. About 400 growers, 15% fewer than in 1958, planted over 11,000 acres; of which about 75% was in southern Alberta. Anticipating marketing troubles as a favorable growing season progressed, the Eastern Irrigation District growers requested guidance; which was extended in a series of three meetings. The early frost took care of the potential surplus, markets remained firm, and no organization materialized.

Successful harvesting of 80 acres of onions, combined with good prices in 1958, resulted in this crop expanding on to 385 acres this season. New storage facilities were built at Bow Island for a group growing 260 acres of onions and smaller acreages of swede turnips and cabbage. Early September frost and snow brought harvesting and drying problems, on which assistance was rendered. Somewhat less than half the seeded acreage was successfully harvested.

The three Canneries experienced a satisfactory year with yields down slightly from last year from an almost static acreage. One Company is increasing its production of frozen French fries and another food processor undertook a new venture in green tomato pickles.

Plans and other data were supplied in regard to the setting up of a hydro-cooler for sweet corn in the Vauxhall-Hays area. This project, in which the local P.F.R.A. office is active, may become operational next season. It would increase the volume of corn-on-the cob reaching the consumer in top market condition.

REPORT OF THE APICULTURE SERVICE

The honey crop was 32.8% below the 1958 record crop. The number of colonies operated showed an increase of 15.6%. There was a decline in the production per colony of 57.5%.

Weather conditions were the main factor in the decline although winter killing and poor germination of clover and alfalfa was a contributing factor in some areas. The Brooks district in the South reported severe winter killing of alfalfa, and some areas in the Peace River area reported poor germination of 1958 clover seedlings. In most areas very little honey was gathered in August due to inclement weather.

The quality of the crop was quite satisfactory. Some cases of high moisture honey occurred from mid-August on, but generally, color and moisture content were well within the White No. 1 class and grade.

Markets

The bulk of the honey crop reaches the consumer during the year following production. Alberta beekeepers and honey packers were confronted with the task of selling the large 1959 production. All retail sales showed increases, also several bulk markets for raw honey materialized in Eastern Canada. By the time the 1959 production arrived at the honey packing plants, stocks were the lowest they had been for several years. With the low production no marketing difficulties appear imminent.

Prices to the producer declined slightly due largely to a higher percentage of the crop being shipped to Eastern markets, resulting in higher freight costs. Retail prices remained firm.

Package Bees

Supply and delivery of package bees from California was excellent. California weather conditions were ideal for queen rearing and mating, and also for worker bee production, hence there were no delays in shipments and queen losses were very low. Package bee prices remained the same as for 1958.

Wintering

A few large commercial units are testing wintering bees in buildings designed or modified for this purpose. Considerable success has been achieved. Consumption of honey is reported to be much below that of colonies wintered outside.

Disease Control

Mr. Alan M. Frost was employed in September on a monthly basis, to assist in disease control work.

Inspections for American foulbrood were concentrated in the southern portion of the province. Eight inspectors carried out the bulk of the inspections. Apiaries of 570 beekeepers were inspected, representing operation of 35,430 colonies. Where no disease was found, 25% of the colonies were inspected. Where diseases was found to exist, all colonies were checked. Where heavy infection existed and the colony was weak it was destroyed; if a light infection was found the diseased frames were removed to be burned or have the wax melted out, and instructions to treat all colonies with drugs or antibiotics were given. This system has worked very satisfactorily in the majority of cases. Four commercial units were found to be infected early in the season. Treated in the above manner no sign of disease could be found when re-inspected in the fall.

Number of colonies inspected (summer)	7,884
Number of brood chambers inspected (winter)	6,247
Number of diseased colonies	647
Number of apiaries inspected	570

The colonies of the 570 apiaries inspected represented 68% of the colonies in the province.

Acarapis Woodi

Considerable concern resulted from a shipment of queen bees from California to Australia being rejected due to discovery of an acarapis mite being found on one of the bees. Alberta imports almost 100% of package bees used from California.

A microscopic investigation of bees from colonies in Alberta showed 3% of the bees checked carried acarapis mites. From the location on the bee where these mites were found they were considered to be Acarapis dorsalies which does no significant damage to the bees. Considerable doubt exists as to whether or not the mites found on the queens sent to Australia were Acarapis woodi, the cause of Acarine disease. American authorities checked all colonies owned by the beepeeker from whose apiary the queens had originated, and found only Acarapis dorsalis to be present. Although this was the first time Acarapis dorsalis had been found in Alberta there are no reports of previous investigations having been conducted.

Statistics

	1958	1959
No. of colonies	46,000	53,000
No. of beekeepers	1,490	1,540
Average yield per colony (lbs.)	%165	96*
Total production (lbs.)	%7,600,000	5,107,000*
Value of honey ($)	1,140,000	7,405,000*
Value of wax and honey ($)	1,188,000	7,444,000*

%1958 figures final.
*1959 figures preliminary estimates.

Canadian Agricultural Stabilization Board Information

A stabilization price for honey has been declared.

Farm Improvement Loans Act

June 24, 1958, a revision of the Farm Improvement Loan Act was revised to make beekeepers eligible under this Act.

Report of the Livestock Branch

W. H. T. MEAD, Live Stock Commissioner
W. C. Gordon, Live Stock Supervisor (Cattle)
A. J. Charnetski, Live Stock Supervisor (Swine & Sheep)
I. A. Coles, Supervisor of Feeder Associations
J. S. Lore, Live Stock Supervisor (Performance Testing)
J. J. Kallal, Live Stock Fieldman (Cattle)
S. B. Clarke, Brand Recorder
W. S. Baldwin, Inspector (Stockyards)

Live stock trade was generally characterized by reduced prices to producers. Finished cattle held up well to November due largely to reduced supply. Feeder and stocker prices started a downward trend in July due to the virtual stop of U.S. demand at about that time. Cattle and calves into Alberta feedlots was estimated to be about 15 per cent greater than the previous year.

The hog market experienced extremely heavy supply with reduction in floor price level and change of grading system in October, together with an announcement that Federal Government support would become a deficiency price system at January 11th, 1960.

Extremely unsettled conditions were prevalent in the sheep industry resulting from (1) further reports of scrapie disease which triggered embargoes against Alberta sheep by several states in the U.S., and (2) substantial increases in imports of New Zealand and Australian lamb. Unrest in the industry was sufficient to result in several industry meetings and investigation by a Federally appointed committee. Fall sales of rams and boars were slow, and resulted in greatly reduced prices.

CATTLE

Cattle condition was generally good, following the mild winter of 1958-59.

Poor moisture conditions and cool weather delayed early spring pastures and some feed shortages developed in east central and northern areas. Improved pastures following late spring and summer rains resulted in cattle going into the winter of 1959-60 in good condition.

Feed supplies appear ample in southern areas, but some central and northern area will experience a grain shortage due to poor harvesting conditions.

Alberta's cattle and calf population was estimated at 2,570,000 at June 1st, 1959.

Stock inspection figures indicate 13.3 per cent decrease in marketings compared to 1958.

Finished cattle prices remained fairly strong throughout the year.

Feeder cattle prices were as high or higher than finished cattle prices for most of the year until late fall when feeder cattle prices declined approximately $3.00 per cwt. over the period from

September to December, due mainly to lower export of feeders to the U.S. than in the fall of 1958.

Returns from pure bred sales in 1959 were generally below 1958 but were still satisfactory for those held from March through June. The export of bulls to the United States was down in numbers from the previous year. Fall sales were noticeably affected by the bad harvest weather and unthreshed crop, and bulls moved at these sales at much lower prices.

Eight hundred and sixteen bulls were sold at the 59th annual Calgary Bull Sale for an average of $778.13 as compared to 711 head and an average of $749.14 in 1958. This was the only major sale where the average was higher than the previous year. James L. Hole, Calgary, sold the Hereford bull "Real Silver Prince 3M"—568255—for the top price of $8,000.00 to Stanley Jackson and W. J. McNugh, Kippen, Ontario. Albert Murphy, Altario, sold the Aberdeen Angus bull "Bardolier of Altario 119"—162065—for $2,550.00 to L. Trebesch, Dutton, Montana, U.S.A. A. R. Cross, Midnapore, sold the Shorthorn bull "Rothney Kinross"—376064—for $4,100.00 to Held Brothers, Hinton, Iowa, U.S.A.

Pure bred breeders sold 2,941 beef bulls through twenty-three consignment sales. Sales were held at Calgary, Edmonton, Olds, Grande Prairie, Red Deer, Innisfail, Stettler, Lloydminster (two), Cereal, Lacombe, Lethbridge (two), High River (two), Medicine Hat (two), Brooks (two), Taber, St. Paul, Camrose and Sangudo.

	No. Sold	Total Value	Av. Price
Hereford	2,198	$1,205,765.00	$594.00
Aberdeen Angus	371	181,855.00	490.00
Shorthorn	372	176,570.00	475.00

Estimated number of cattle and calves on Alberta farms at June 1st.

Year	No. of Head
1955	2,250,000
1956	2,449,200
1957	2,600,000
1958	2,500,000
1959	2,570,000

CATTLE AND CALF SHIPMENTS OUT OF THE PROVINCE

	1955	1956	1957	1958	1959
British Columbia	86,478	85,511	106,308	92,641	73,267
Saskatchewan	1,051	1,201	780	1,316	1,408
Manitoba	19,079	29,241	20,606	16,695	23,881
Ontario	58,776	84,669	56,772	52,838	52,569
Quebec	34,941	37,406	35,131	21,039	15,684
Nova Scotia	....	83	45	613	377
New Brunswick	26	44	....	....	....
U.S.A.	12,459	1,123	108,957	200,882	72,928
Newfoundland	....	....	....	....	....
Prince Edward Island	....	....	....	....	....
	212,810	239,278	328,599	386,024	240,114

THE CATTLE IMPROVEMENT POLICY

This Policy operated under the same terms and conditions as during 1958 except that the assistance was increased from 10% with a maximum of $50.00 to 20% and a maximum of $75.00. Special assistance to residents of pure bred sire areas was withdrawn. Both A and B sections were extremely well patronized and District Agriculturists had to be requested to assist with bull inspections to avoid undue delay in processing applications.

Policy A

One thousand, four hundred and eighty-four applications were processed under this section of the Policy in 1959. Of these, ninety-two were ordered for the Department to purchase and ship. One thousand, three hundred and ninety-two were bulls selected by applications subject to approval as to quality and price by the Department.

The following table shows the placement of bulls for the past six years:

1954	630
1955	558
1956	505
1957	572
1958	642
1959	1,484

Policy B

This phase of the Cattle Improvement Policy was requested and applied at twenty-three sales in 1959. Assistance was paid on a total of 1,401 bulls. By breeds, these were 1,017 Hereford, 186 Shorthorn and 198 Angus.

This section of the policy has now operated two full years with the following totals:

1958	1,058
1959	1,401

FEDERAL-PROVINCIAL BEEF CATTLE PERFORMANCE TESTING PROGRAM

Following investigations of beef cattle testing that date back to 1955, an Alberta section of this policy was set up early in the year. Appointments to the Alberta Advisory Committee on Beef Cattle Performance Testing were made to representatives of the Alberta Live Stock Branch; the University of Alberta Animal Science Department; the Production-Marketing Division of the Federal Department of Agriculture; the Alberta Hereford Association, the Alberta Angus Association; the Alberta Shorthorn Association; and the Western Stock Growers' Association. The Live Stock Commissioner was named as chairman of the Provincial committee and as Alberta representative of the committee to the National Board.

The committee met in March and drafted a farm test program for Alberta which was presented to all Angus, Hereford and Shorthorn breeders.

Mr. J. S. Lore was appointed in October to the newly created position of Supervisor of Beef Cattle Performance Testing.

Applications were received from 75 breeders. Arrangements were completed for initial weights of 1959 calves in 52 herds. The following table shows the extent of participation in the first year.

	No. of Herds	Male Calves Weighed	Female Calves Weighed	Total Calves Weighed
Aberdeen Angus	15	156	111	267
Hereford	32	304	230	534
Shorthorn	5	29	23	52
Totals	52	489	364	853

In addition to the above, 330 calves were weighed which were outside of standard age limits for indexing.

LIVE STOCK LISTING BUREAU

Activity under this Policy was limited to the purchase of seven bulls. Persons enquiring for females were referred directly to breeders who had indicated surplus stock for sale.

GENERAL

Branch supervisors visited 382 breeders' premises and appraised 1,425 bulls in connection with Cattle Improvement Policy A. They assisted with the program at six meetings and one field day, and judged at fifteen 4-H beef club achievement days, at which there were a total of thirty-eight clubs. Cattle Improvement Policy B required attendance at twenty-one bull sales, as members of selection committees. They also officiated as judges at three fairs and one fat stock show. Thirty-eight farm calls were required relative to selection of the Royal Winter Fair live stock exhibit.

TORONTO ROYAL AGRICULTURAL WINTER FAIR

The 1959 Toronto Royal Agricultural Winter Fair was held November 13th to 23rd. Twenty-two carloads of live stock were shipped via Canadian Pacific Railways, leaving Alberta November 3rd.

The shipment was comprised of 18 draught horses, 8 light horses, 4 carload lots of 12 steers, 5 groups of 5 steers, 26 single steers, 73 beef breeding stock, 8 dual purpose cattle, 31 dairy cattle, 31 hogs and 57 sheep.

Freight assistance was provided on the basis of 75% paid by the Canada Department of Agriculture and 25% by the Alberta Department. In addition, the Alberta Department of Agriculture paid the cost of selection, decking cars and cost of feed in connection with the shipment.

The following table shows the prizes won by Alberta exhibitors:

	Horses	Beef Cattle	Market Cattle	Dairy Cattle	Sheep & Wool	Swine	Total
Grand Champion	......	.	1	1	1	......	3
Reserve Grand Championship	......	2	......	....	......	......	2
Championships	1	2	4	2	3	......	12
Reserce Championship	2	2	3	..	4	... .	11
1st Prize	3	11	8	4	13	1	40
2nd Prize	3	10	8	2	11	2	36
3rd Prize	6	18	4	6	10	4	48
Other Prizes	9	51	14	21	30	16	141
	24	96	42	36	72	23	293

Outstanding achievements were:

Byers Flour Mills, Camrose, Champion car lot steers and Champion pen of 5 steers. McIntyre Ranching Co. Ltd., Lethbridge, Grand Champion single steer and Reserve Champion car lot steers. D. R. Buchanan, Pincher Creek, Reserve Champion pen of 5 steers. Ed Noad, High River, Champion Hereford steer and Reserve Champion Shorthorn steer.

C. J. Kallal and Sons, Tofield, were declared premier breeder and premier exhibitor of Herefords for the third successive year. Remitall Cattle Co., Olds, Reserve Grand Champion Shorthorn female. Mrs. S. E. Atkinson and Son, Lacombe, Reserve Grand Champion Red Poll bull.

Pickard and Clark, Carstairs, Grand Champion Holstein cow for the third successive year.

P. J. Rock and Son, Drumheller, Reserve Champion Suffolk ram, Champion North Country Cheviot ewe and Reserve Champion North Cheviot ram. John Wilson, Innisfail, Champion Corriedale ram, Reserve Champion Corriedale ewe and Grand Champion fleece.

L. M. Rye, Edmonton, Champion Canadian Bred Clydesdale gelding. Lady Roderic Gordon, Bentley, won the "Burton" Canadian Open Hunter Stake with her horse "Greensleeves". Alec Ingram, Midnapore, Champion Canadian bred Clydesdale mare.

LIVE STOCK FEEDER ASSOCIATIONS

The Feeder Associations Guarantee Act provided for credit to farmers through organized associations, for purchasing feeder live stock for fattening. It assisted farmers to market feed grains and forage crops through live stock and also provided an additional local market for feeder live stock.

The Act was amended on April 7th, 1959 which increased the total amount of borrowings under this Act, to an Association from one hundred thousand dollars to two hundred thousand dollars or such lesser amount as the Minister may prescribe for a particular association.

Thirty-four feeder associations operated under The Feeder Associations Guarantee Act during the 1958-59 season. These associations fed 21,707 cattle and 9,623 lambs, utilizing a credit of $2,803,826.05.

Most cattle feeders received a satisfactory margin of profit on their feeding operations.

Lamb feeding profits were almost nil and in many cases, lamb feeders sold fat lambs at prices below the price per pound paid for feeder lambs, due mainly to imports of dressed lamb.

All loans under the 1958-59 guarantees have been repaid.

Outstanding loans under the 1951-52 guarantees at loaning institutions at December 31st, 1959 totalled $14,073.67. These outstanding loans resulted from market conditions following Foot and Mouth diagnosis in 1952 and necessitated continuation of a policy whereby indebted associations could continue to operate under certain conditions and reduce outstanding accounts by continued feeding operations.

O.C. 1693/59 provided for the Provincial Treasurer to implement the 1951-52 Guarantee to Vermilion and District Live Stock Feeders' Association Ltd. in the amount of $1,460.33.

Four new associations operating in the 1958-59 season were: Bashaw, Hays, North Peace and Parkland-Stavely.

Raymond-Magrath and Garden City associations amalgamated in October 1959 and now operate under the name of Raymond-Magrath Feeders' Association Ltd.

FEEDER ASSOCIATIONS OPERATIONS 1958-59

Association	No. Members	Cattle	Sheep	Amount of Credit
Acme	37	847		$ 111,606.98
Andrew-Willingdon	4	79		7,490.71
Bashaw	29	431	305	52,433.56
Battle River	40	975	36	111,367.74
Big Rock	13	376		43,850.60
Big Valley	27	780		88,234.60
Bowden	31	764		107,203.03
Bow Valley	28	631	1,982	87,565.06
Cardston	18	567		55,584.17
Carstairs	28	768		105,938.92
Central Alberta	39	944	80	120,359.02
Eagle Hill	28	676	50	75,099.64
East Bow Valley	22	544	1,074	73,552.14
East Central	34	996		122,060.26
East Olds	19	504		61,058.19
Garden City	9	332		35,175.81
Hays	5		949	12,082.93
Highwood	30	707	207	107,363.55
Horse Shoe Lake	32	699		109,940.11
Innisfail	31	899		113,021.76
Knee Hill Valley	34	872		130,813.52
Little Bow	29	767		103,472.02
Marwayne	18	435		44,792.01
Meadowbrook	32	809		108,279.38
North Peace	20	384		38,919.90
Okotoks	8	186		26,583.91
Parkland-Stavely	34	882		116,884.73
Ponoka	30	750		80,221.29
Raven	37	1,080		126,104.25
Raymond-Magrath	13	444	198	49,688.64
South Slope	27	544	1,943	84,148.96
Taber	21	384	1,253	67,509.76
Tilley-Rolling Hills	36	784	1,456	104,927.62
Western	33	867	90	120,491.28
	876	21,707	9,623	$2,803,826.05

FEEDER ASSOCIATION OPERATIONS 1938-39 TO 1958-59

Feeding Season	No. of Associations	Members	Cattle	Sheep	Credit
1938-39	6	180	9,239	19,187	$ 368,421.45
1939-40	12	351	16,248	20,287	775,125.21
1940-41	12	451	17,056	37,863	954,489.50
1941-42	15	408	14,945	41,157	1,117,186.08
1942-43	17	437	13,279	31,452	1,092,768.43
1943-44	16	395	11,639	53,768	1,191,641.50
1944-45	15	257	7,968	46,537	834,347.71
1945-46	15	319	9,556	60,845	1,098,291.77
1946-47	13	245	7,057	37,036	729,447.90
1947-48	13	239	8,088	26,241	859,922.29
1948-49	13	212	4,784	13,020	837,732.21
1949-50	10	237	4,978	8,948	622,759.22
1950-51	11	291	5,615	4,381	917,400.70
1951-52	26	642	11,236	6,750	2,328,596.59
1952-53	25	447	9,704	7,068	1,178,834.14
1953-54	23	428	9,538	8,250	919,327.06
1954-55	24	559	13,307	10,434	1,232,701.01
1955-56	27	724	17,794	12,874	1,651,635.24
1956-57	29	834	23,124	10,585	2,008,057.61
1957-58	32	844	24,507	14,514	2,351,826.26
1958-59	34	876	21,707	9,623	2,803,826.05
			261,369	480,820	$25,874,447.92

ARTIFICIAL INSEMINATION

Four new co-operative breeding associations started operation under the Department's assistance policy. These are located at Sangudo, Pincher Creek, Sedgewick and Grande Prairie. In addition, one association started operation at Cardston where volume was insufficient to quality for assistance.

With help from Department personnel the Alberta Association of Artificial Breeders was organized as a co-operative with membership of all co-operative breeding units in the province.

Numerous meetings were attended by the Live Stock Commissioner and the Supervisor of Dairy Cattle Improvement during the process of organizing new unit associations and the provincial association; and in addressing general meetings of existing groups and bull selection committees.

Further activity took place in breeding in ranch herds under specialized management. This factor has focused special attention of breeding centres on procurement of performance tested beef bulls.

It was estimated that approximately 49,800 cows were bred artificially, compared to 36,818 the previous year. The number of dairymen and farmers using this service was approximately 6,172.

In the interest of close co-operation between the various inseminating units, this Department, and the source of semen supply, the Supervisor of Dairy Cattle Improvement attended the Ontario Association of Artificial Breeders' Annual meeting at Toronto. The president of that association spent a week visiting with units in Alberta.

DAIRY HEIFER CALF POLICY

Due to difficulty in obtaining necessary supply, the price of calves was increased from $32.50 to $40.00 at March 25th. The Department continued to pay gathering and delivery costs. A total of 428 calves were supplied to 33 different 4-H dairy clubs.

SHEEP AND SWINE

Activities in the sheep and swine industry continued to demand full time attention of one supervisor, in fact all requests for services in this division could not be met at seasonal peaks. The following table indicates meetings attended and farm visits made, but does not include many other services rendered this division.

Year	No. Meetings	Total Attendance	Average Attendance	No. Farm & D.A. Visits
1954	92	4,413	48	214
1955	58	3,000	52	219
1956	91	4,041	44	330
1957	44	2,404	57	290
1958	40	2,588	65	375
1959	43	3,364	78	270

SWINE

Alberta swine marketings in 1959 totalled 2,265,430 hogs. This was surpassed only in 1944 when 2,981,940 hogs were marketed. 1959 marketings were increased by 20% over 1958. Canadian increase was approximately 37% over 1958. Presently there is an indication that Alberta swine production in 1960 may be reduced by approximately 15%. Quality-wise, Alberta hogs showed a slight improvement over 1958 as will be indicated by a tabulated report elsewhere. Alberta hog prices remained close to the floor of $21.50 grade A basis until October 5th when floor price was reduced by $1.35 per cwt. providing for a new floor price of $20.15, however, prices remained at around $20.35 for the balance of the year.

Under this floor plan, the Agricultural Stabilization Board acquired over 100,000,000 pounds of pork products which presented a serious storage and disposal problem. In view of these complications, the Federal Department of Agriculture announced the forthcoming change from that of a hog support price to a plan of deficiency payment which becomes effective on January 11, 1960.

Federal hog grading standards were revised and became effective on October 5th. The revision was designed for greater encouragement for production of leaner pork and bacon. The new grades were: A, B, C, D, light, heavy and extra heavy. There were two A and B grade classifications according to weight of carcass. The Federal Government premium of $2.00 on A grade and $1.00 on B grades remained as in the past.

Present price differentials on hog carcass grades were as follows:

Grade A	—Basic Price
Grade B	—$1.00/cwt. discount from basic
Grade C	—$3.00/cwt. discount from basic
Grade D	—$5.50/cwt. discount from basic or less according to weight
Light	—$3.50/cwt. discount from basic
Heavy	—$3.25/cwt. discount from basic
Extra Heavy	—$4.75/cwt. discount from basic
Ridgelings	—$7.00/cwt. discount from basic

The 1959 Canadian pork exports mainly to the U.S.A. exceeded those of 1958 by approximately 20% and will amount to over 80,000,000 pounds. Export of live hogs (a few pure breds) to the U.S.A. was negligible.

Demand for pure bred breeding stock varied from good in the early part of the year to poor during the latter half of the year. This situation was brought about by unattractive support prices and extremely poor harvesting conditions in major swine areas.

High quality of pure bred breeding stock offered at regular swine sales was maintained through the action of selection and culling committees as required by regulations under terms of Swine Improvement Policy "B".

Canada wide distribution of breeding groups of three sows and one boar of the Lacombe breed was made from the Lacombe Experimental farm in April and October. Twenty-three of these groups remained in Alberta.

The Lacombe breed has been well eccepted by commercial producers who reported excellent results from its use in a cross-breeding program with the Yorkshires.

The Advance Registry Swine Policy was revised slightly in 1959. It requires a higher standard of carcass quality through leaner back fat selections and a higher quality belly grade. The name of the policy was changed to Record of Performance to conform with the names applied to other classes of live stock under performance testing. The new policy also provided for re-organization of the National Swine Testing program. The main change in the committee itself was the naming of the Live Stock Commissioner as permanent chairman and Departmental representative to the National R.O.P. committee; and increased breeder representation from two to six members.

During the year a total of 14 swine sales were held; of these five were held in the spring and nine in the fall. Price-wise, fall sales were disappointing due to low prices on market hogs and to the most unfavorable harvesting conditions. At the request of various sale managements, Swine Improvement Policy "B" applied to all of these sales. This policy operated without change from the previous year.

PRICE AVERAGE COVERING ALL ALBERTA SALES 1958-59

Breed and Sex	1958		1959	
	No.	Av. Price	No.	Av. Price
Yorkshire Boars	584	$113.97	341	$ 72.79
Yorkshire Sows	626	102.75	469	73.09
Tamworth Boars	79	86.30	55	71.91
Tamworth Sows	64	83.82	50	62.00
Berkshire Boars	1	90.00	1	60.00
Berkshire Sows	4	96.25	3	68.33
Landrace Boars	46	125.81	75	88.03
Landrace Sows	28	147.86	65	85.70
Lacombe Boars	....	....	6	133.34
Lacombe Sows	....	....	1	275.00
Total and Average	1,433	$107.16	1,066	$ 74.73

PRICE AVERAGE COVERING CALGARY AND EDMONTON SALES IN 1958-59

Breed and Sex	1958		1959	
	No.	Av. Price	No.	Av. Price
Yorkshire Boars	320	$132.21	193	$ 80.35
Yorkshire Sows	400	111.36	284	79.71
Tamworth Boars	54	90.46	38	73.61
Tamworth Sows	55	85.14	42	63.93
Berkshire Boars	1	90.00	1	60.00
Berkshire Sows	4	96.25	3	68.33
Landrace Boars	35	132.14	40	92.31
Landrace Sows	25	154.20	46	91.14
Lacombe Boars	....	....	2	167.50
Lacombe Gilts	....	....	1	275.00
Total and Average	894	$117.87	650	$ 80.60

PRICE AVERAGE FOR REGIONAL SALES (NOT R.O.P.) 1958-59

Breed and Sex	1958		1959	
	No.	Av. Price	No.	Av. Price
Yorkshire Boars	227	$ 91.29	122	$ 60.82
Yorkshire Sows	193	89.73	160	63.24
Tamworth Boars	25	77.30	17	68.09
Tamworth Sows	9	75.78	8	51.87
Landrace Boars	11	105.68	32	80.31
Landrace Sows	3	95.00	19	72.63
Total and Average	468	$ 89.96	358	$ 64.42

PRICE AVERAGE FOR CAMROSE R.O.P. SALE 1958-59

Breed and Sex	1958		1959	
	No.	Av. Price	No.	Av. Price
Yorkshire Boars	37	$ 95.34	26	$ 72.79
Yorkshire Sows	34	75.37	25	61.00
Lacombe Boars	......	....	4	116.25
Landrace Boars	......	....	3	113.33
Total and Average	71	$ 85.78	58	$ 72.80

SWINE IMPROVEMENT POLICIES

The Swine Improvement Policy and the R.O.P. Sow Assistance Policy operated as in previous years. Swine producers at all levels of production have recognized the value and the contribution these policies have made to quality improvement in swine. The Live Stock Branch also operated a Live Stock Listing Bureau. Farmers and pure bred breeders who were not eligible for service under the regular Swine Improvement Policy were permitted to purchase pure bred boars and sows under L.L.B. Policy, but without the benefit of a bonus or prepayment of shipping charges. Boars of Yorkshire, Tamworth, Landrace and the Lacombe breed were eligible for bonus under Swine Improvement Policy A and B.

SWINE PLACED UNDER IMPROVEMENT POLICY A AND L.L.B.

Year	Live Stock Listing		Impr. Policy	Total	Bonus
	Gilts	Boars	Boars	Boars	Paid
1955	27	14	160	174	870.00
1956	9	13	185	198	1,645.00
1957	6	26	213	*239	2,060.00
1958	9	19	234	253	2,340.00
1959	11	15	257	272	2,520.00

This total includes 22 Tamworth, 11 Landrace and 7 Lacombe boars.

BONUS PAYMENTS ON POLICY "B" BOARS AT ALL ELIGIBLE SWINE SALES

	No. @ $5.00	No. @ $10.00	Total Boars	Total Bonus
1957	4	351	355	3,530.00
1958	......	430	430	4,300.00
1959	62	226	288	2,570.00

RECORD OF PERFORMANCE TEST SOW BONUS POLICY

	Breed	Bonus Paid Out $30.00	$40.00	$50.00	Total No. Sows	Total Paid Out
1958	Yorkshire	19	40	25	84	$3,420.00
1959	Yorkshire	27	36	21	91	3,600.00
	Landrace	....	......	3		
	Lacombe	2	1	1		

During the early part of the year ten swine clinics were held. Regular meetings on swine management, feeding and housing were held at the request of various District Agriculturists. Considerable time was required to deal with many swine problems arising on individual farms, including building renovations, insulation, ventilation, sanitation, and nutritional problems. A fair amount of time was given to judging at 4-H Swine Clubs and other junior swine work. Demand for representation on swine selection committees at various approved pure bred swine sales and at special meetings and short courses very often exceeded available time to adequately deal with all administrative and extension demands.

ALBERTA HOG GRADING FOR YEARS 1955 TO 1959 INCLUSIVE

Grade	1955 %	1956 %	1957 %	1958 %	1959 %
A	18.90	20.20	20.70	21.40	**22.3**
B1	42.77	41.20	40.90	41.10	**49.3**
B2	4.47	5.00	3.70	3.60	....
B3	5.58	5.20	6.10	6.40	....
C	15.01	14.50	15.50	13.70	**13.8**
Light	2.01	2.30	1.40	1.4	**2.6**
D	0.71	0.80	0.60	0.7	**1.3**
Heavy	2.53	2.10	2.90	3.0	**2.5**
Extra Heavy	1.94	2.40	2.50	2.6	**1.8**
Injured	0.03	0.03	......	......	....
Rgl.	0.53	0.50	0.50	0.6	**0.5**
Stags	0.47	0.60	0.50	0.5	**0.6**
Sows	5.05	5.20	4.70	5.0	**5.3**

TOTAL NUMBER AND VALUE OF ALBERTA HOGS SOLD AT ALL INSPECTED PLANTS

Year	Total No.	Value per Pig	Total Sales Value
1955	1,685,887	$35.78	$60,324,854.00
1956	1,571,029	37.55	59,025,934.00
1957	1,432,157	44.97	64,413,949.00
1958	1,812,186	41.17	74,618,843.00
1959	2,265,430	32.99	74,729,118.00

ESTIMATED NUMBER OF SWINE ON ALBERTA FARMS AT JUNE 1st

1955	1,620,000
1956	1,211,500
1957	1,300,000
1958	1,710,000
1959	1,780,000

SHEEP

Acceleration of interest in sheep production by small farm operators in the fringe areas was very evident and developed partly from sheep extension conducted in recent years through shearing and management schools. Several new commercial flocks were established direct through the Live Stock Branch, and a number of others were established by direct reference of prospective buyers to those having sheep for sale. The newly established flocks consisted mainly of the white face range breeds. Increased numbers of application for white faced rams illustrated the added interest in these breeds.

Sheep shearing and sheep management schools were held at Carrot Creek, Benalto, Warden, Mirror, Plamondon, Worsley, Onoway and Lacombe within a period of 10 days. Schools were of one day duration. Total attendance was 322 persons, or 40 persons per school. The program consisted of actual participation in shearing and packing wool, docking and castrating of lambs, treating for parasites and general management discussion. Blade and power shearing was under the direction of Messrs. H. A. Sams of Rochester and Wm. Payne of Mountain View. The co-operation and participation of the Canadian Co-operative Wool Growers' Association at Edmonton in supplying the necessary material and a wool specialist for the entire shearing school itinerary was most gratefully appreciated.

A number of sheep meetings and one sheep tour was held. Attendance at meetings and subsequent correspondence on sheep matters indicated exceptional interest.

Alberta sheep population continued to expand gradually though purchase of breeding ewes and by retention of ewe lambs for flock expansion. One to four year old breeding ewes ranged from $15.00 to $25.00 per head. Ewe lambs for breeding purposes weighing 75 to 85 pounds sold at $14.00 to $15.00 per cwt. The bulk of feeder lambs sold from $12.00 to $14.00 per cwt.; with some heavy feeders as low as $11.00. Uncertainty of future lamb markets, largely due to increased importations of New Zealand and Australian frozen lamb, resulted in shipment of about 1,500 lambs to Ontario and about 15,000 to the U.S. Approximately 20,000 lambs went into Alberta feedlots compared to 60,000 the previous year.

Under the Federal support price the Stabilization Board purchased approximately 25,000 lamb carcasses in 1959 at the floor price of $16.30 per cwt. F.O.B. Calgary and Edmonton.

The year's average price of good finished lambs on Edmonton stockyards was $17.70 per cwt. A top price of $23.25 per cwt. for spring lambs ruled during the week of July 4th, but gradually receded to $18.80 by the week ending August 1st.

The total Alberta wool clip was estimated at 2,360,000 pounds, an increase of about 11%. The average fleece weight of 8 pounds was above the Canadian average. The Federal Government support price remained at 60 cents per pound. The deficiency payment on the 1959 clip may be about 23 cents. The deficiency payment made on the 1958 clip was 28 cents per pound.

The re-appearance of Scrapie disease resulting in embargoes on Canadian sheep by the States of Montana, Utah, California and Idaho was a serious factor to the Alberta sheep industry. Upon representation from the Southern Alberta Sheep Breeders' Association, the Federal Government imposed the American plan of scrapie control. This action resulted in removal of the embargo by Montana, Utah and California but the bulk of lamb trade and ram trade was completed before embargoes were lifted.

Two pure bred flocks were disposed of to slaughter and a considerable number of pure bred and commercial flocks were affected by enforced slaughter of progeny tracing to "source" flocks and limited quarantine on the balance of animals in the flocks. Breeders were compensated for slaughtered animals on the basis of an evaluation placed by a special committee.

The report by the Sheep Industry Survey Committee was published and released. This Committee was set up by the Federal

Department of Agriculture in 1958 and held several meetings in Alberta.

Pure bred sheep sales were held at Calgary, Edmonton and Lethbridge. Prices were low, particularly on black faced breeds. The U.S. embargo which kept out many American buyers from border states, and the frozen lamb importation with its effect on domestic lamb prices, were the basic causes for this situation. The sales were held under terms of the Alberta Sheep Improvement Policy B whereby eligible purchasers of rams qualified for a bonus of $8.00 on "B" grade rams and $12.00 on the "A" grades.

COMPOSITE SUMMARY OF PURE BRED SHEEP SALES AT LETHBRIDGE, CALGARY AND EDMONTON

	1958		1959	
Breed and Sex	No.	Av. Price	No.	Av. Price
Suffolk Rams	97	$ 96.92	69	$ 51.23
Suffolk Ewes	70	62.31	54	31.98
Hampshire Rams	38	60.46	24	40.91
Hampshire Ewes	2	50.00	9	19.11
Cheviot Rams	5	33.50	8	32.19
Cheviot Ewes	2	25.00	......	....
N.C. Cheviot Rams	29	94.74	20	65.38
N.C. Cheviot Ewes	12	53.34	7	123.56
Corriedale Rams	36	78.95	29	67.50
Corriedale Ewes	......	....	5	26.00
Southdown Rams	6	53.34	4	38.75
Southdown Ewes	3	43.00	8	18.38
Oxford Rams	9	66.12	1	30.00
Oxford Ewes	3	27.50	2	20.00
Columbia Rams	2	155.00	......	....
Total Sheep & Average	319	$ 76.36	240	$ 47.10
Grade Ewes	90	22.23	192	10.88

The Calgary summer sheep sale of selected stud rams and ewes was held during Stampede week. A total of 32 head were sold. The averages were—Corriedale ewes $120.00; Suffolk ewes $104.70; Suffolk rams $231.50; Hampshire rams $145.00. The highlight was the selling of a Stoneman Suffolk ram lamb to Mr. C. W. Flint of Tulsa, Oklahoma at $1,075.00. Runner-up was Dick Scholton of Medicine Hat.

SHEEP IMPROVEMENT POLICY

Sheep Improvement Policies A and B were operated on the same basis as in the previous year. The system of grading rams for sales under policy B was well received by breeders and buyers. The Department also operated a Live Stock Listing Bureau which was a service policy to farmers who did not qualify for bonus on rams, or who wished to purchase breeding ewes.

The following table shows all sheep placements under L.L.B. and Sheep Improvement Policy A.

	Live Stock Listing Bureau		Improvement Policy	Total
Year	Ewes	Rams	Rams	Rams
1955	164 (grade)	7	34	41
1956	9	......	21	21
1957	......	2	62	64
1958	110 (grade)	6	73	79
1959	276 (grade)	8	91	99

1959 ram placements consisted of: 29 Suffolk, 10 Hampshire, 14 Corriedale, 12 North Country Cheviot, 7 Rambouillets, 3 Romnelets, 19 Columbia and 5 Oxfords.

BONUS PAYMENTS ON POLICY B RAMS AT ALL ELIGIBLE SALES

	No. @ $8.00	No. @ $12.00	Total Rams	Total Bonus Paid
1957	45	76	121	$1,272.00
1958	29	51	80	844.00
1959	28	58	86	920.00

ALBERTA SHEEP POPULATION—JUNE SURVEY

1955	460,000
1956	404,000
1957	450,000
1958	470,000
1959	530,000

HORSES

The horse population continued to decline with estimated number on farms at June 1st set at 120,000 compared to 132,000 in the previous year.

One horse sale at Calgary and numerous sales at Class D auction markets provided the main market outlet, with the exception of shipments direct to processing plants at Edmonton and Swift Current. Interest in breeding and sales of light horses continued at a high level. A very successful light horse sale was held at Edmonton in April, and a number of feature light horse sales were held at various other points throughout the province.

ALBERTA LIVESTOCK AND LIVESTOCK PRODUCTS ACT

At January 1st all stockyards except those of A classification were required to be licensed. Licensed for the first time were those falling in classes B, E, F. and G. The number of each class licensed were: B—9, C—49, D—32, E—5, F—4 and G—319, for a total of 418.

Class D auction markets licensed for the first time were at Drumheller, Trochu, Coronation, Acme, Onoway, Cereal and St. Paul.

A total of 804 livestock dealers and agents licenses were issued during the year. This total was made up of 550 dealers and 254 dealer's agents. The bonds of 3 dealers were called for failure to make full settlement to producers. An Order-in-Council was passed requiring dealer's bonds for 1960 to be increased to the minimum of $5,000.00 and $10,000.00.

A few licenses were cancelled due to cancellation of bonds by the bonding companies. A number of investigations were carried out by a branch inspector regarding complaints of irregular trading practices.

Twelve wool collectors and five wool warehouses were licensed.

RECORDING OF BRANDS

During the year 2,798 letters were forwarded from the Recorder's office dealing with the registration of new brands, the transfer of brands, and correspondence regarding the use of unregistered brands as reported by brand inspectors.

The following statistical summary sets out the volume of recordings completed.

	Cattle	Horse	Sheep	Poultry	Fox	Total
New brands issued	1,730	246	6	1	......	1,983
Transfers registered	331	39	......	......	......	370
Certified extracts issued	2	..	......	......	......	2
Brands renewed	5,734	865	2	1	......	6,602
Brands cancelled	262	27	......	......	1	290
	8,059	1,177	8	2	1	9,247

Brand Renewal Notices Mailed:

Cattle ... 6,630 Horse ... 883 Sheep ... 6 Poultry ... 3 Fox ... 1 Total ... 7,523

The number of Brands in Good Standing as at December 31, 1959:

Cattle	28,466
Horse	3,685
Sheep	25
Poultry	11
Fur Bearing	1
Total	32,188

THE STOCK INSPECTION ACT

Brand inspection continued to be further complicated by continued decentralization of markets through additional country sales. Inspectors from the permanent staff at Edmonton, Calgary and Lethbridge worked additional sale points at Clover Bar, Hanna, High River, Brooks and numerous community auction and special sales, as well as country shipments direct on export. Deputy inspectors worked regular sales at Hardisty, Provost, Camrose, Wetaskiwin, Ponoka, Red Deer, Innisfail, Olds, Stettler, Coronation, Cereal, Brooks and Taber, as well as numerous community sales and irregular inspections in the Pincher Creek, Lundbreck and Parkbend area.

The total number of stock inspected at all markets and direct on export was 1,109,576 head compared to 1,279,845 head the previous year. This was a reduction of 13.3% which was due to somewhat lighter marketing but mainly due to reduced U.S. export inspections.

Inspection of cattle returned to feedlots, cover crop and pasture totalled 208,095 head compared to 190,085 the previous year. The total of all inspections in and out of markets covered 1,317,671 compared to 1,469,930 head in 1958.

Approximately 900 head of stock was held up for further investigation with about 30 of such investigations conducted from the live stock branch. Three theft convictions resulted directly from these investigations. Numerous stray cattle were returned to rightful owners.

There were 261 butcher and hide dealers licensed, compared to 274 in the previous year. All licensed butchers were visited at least once or twice by branch inspectors.

Two veteran brand inspectors, Mr. R. Larson and Mr. C. N. Long, both of the Edmonton staff, reached retirement age during the year and were replaced by appointment of new inspectors.

LIVE STOCK AUCTIONS OTHER THAN PUBLIC STOCKYARDS

Total cattle sold through about 65 community auction sales was 50,082 compared to 42,839 the previous year.

Class D auction markets continued to increase their volume of sales with an estimated total of all live stock at 446,600 head, as compared to 388,433 in 1958 and 241,122 in 1957.

IMPROVEMENT DISTRICT STRAY ANIMALS ACT

Five new pound districts were established, bringing the total of active pounds in operation to one hundred and thirty-four.

THE HORNED CATTLE PURCHASES ACT

Under provisions of this Act deduction of two dollars per head was made on all horned cattle going through markets in the province or shipped out of the province. The policy of supplying all District Agriculturist offices with dehorning equipment was continued. An advertising campaign promoting the dehorning of calves was carried out during April in all daily and weekly newspapers and farm journals with circulation in Alberta.

The following table shows the percentage of cattle with horns marketed at the main market centres:

	1949	1956	1957	1958	1959
Calgary	15.6	8.7	7.6	6.6	6.9
Edmonton	19.9	13.1	12.4	12.9	11.8
Lethbridge	......	11.7	8.9	8.4	8.2
St. Boniface	13.0	7.3	5.1	2.2	2.9
Community Auction Sales	10.4	4.7	4.0	3.5	4.2
Lloydminster	......	......	3.5	......	......
Class D Stockyards (Auction Marts)	......	......	......	......	......
Provincial Average	17.4	10.9	8.9	9.0	8.7

THE PURE BRED SIRE AREAS ACT

Pure Bred Sire Areas continued in effect in the Municipalities of Athabasca and Vermilion Valley. The introduction of American breeds of cattle not eligible for registration under Canadian standards, coupled with the general attitude in commercial live stock breeding were factors which tended to weaken the structure of those areas now in force and also weakened the prospect of demand for further restricted areas.

ACKNOWLEDGMENTS

The continued co-operation of the various breed associations, sale and exhibition associations, and commercial organizations dealing in the live stock field; together with the support of the R.C.M. Police in matters of investigation and enforcement; of other Departmnets of the Government; and the Federal Production and Marketing Services, was greatly appreciated and hereby acknowledged.

Report of the Dairy Branch

D. H. McCALLUM, Dairy Commissioner

L. M. Silcox, Supervisor, Dairy Factory Inspection
R. P. Dixon, Supervisor, Dairy Cattle Improvement
B. J. McBain, Supervisor, Farm Cost Studies
J. B. Linneboe, Ph.D., Bacteriologist
L. H. Arnold, Supervisor, Frozen Food Locker Plants
W. A. McGrath, Charge of Dairy Statistics

GENERAL REVIEW

Milk production during 1959 was almost identical with that of the previous year when 1.55 billion pounds were reported. The early part of the year was marked with very favourable conditions which resulted in increased milk flow. However, an extremely wet fall delayed and in many cases prevented harvesting which adversly affected production during the late months. The farm value of milk production reached a new all time high of 46.9 million dollars which was approxmiately on-sixth of a million above 1958. The total value of factory products plus that portion of milk used on farms, amounted to over 63.1 million dollars, again an all time high. This figure is regarded as the yearly contribution of the dairy industry to the provincial economy which, of course, does not include the value of meat from dairy cattle and calves.

Receipts of butterfat at creameries were up from the previous year, but the output of creamery butter was down slightly due to the manufacture of butter oil and butter concentrate which have been separated from butter statistics for the first time in this report.

Slight changes occurred in the utilization of milk during the year. Most factory products with the exception of cheese showed increases while milk used on farms for dairy butter, farm home consumption and fed to farm animals all showed decreases according to estimates made by the Dominion Bureau of Statistics.

The quality of dairy products has been maintained at high levels. Entries of creamery butter were successful in winning top honours at the Canadian National Exhibition, the Royal Agricultural Winter Fair and the Glasgow Dairy Show. The Dairy Branch Laboratory took over all bacteriological testing of milk and dairy products from the Department of Health early in the year and reports indicate a continued improvement in fluid milk quality.

In recent years there has been a definite trend toward mechanization which has resulted in fewer farms producing milk and also fewer plants processing or manufacturing milk products. This trend was accentuated during the year as evidenced by the increase in size of herd under test and the fact that seven small dairy manufacturing plants ceased operations during the year. Bulk milk operations continued to expand in the Edmonton, Calgary and Lethbridge milk sheds. It is estimated that at the end of 1959, there were 405 farm bulk tanks and 22 milk transportation tanks in use.

The number of milk cows on farms at June 1st was estimated at 272,000 head which is a reduction of 3000 head from the 1958 total. Calculating milk production per cow on the basis of all cows divided into total milk, we arrive at a figure of 5,686 pounds for a new all time high and an increase of 68 pounds over the 1958 figure.

The Provincial Cow Testing plan showed further expansion during the year with a total of 10,276 cows in 407 herds being tested. The average production of these cows was 10,346 pounds of milk and 361 pounds of butterfat. These figures represent an increase of 1,567 cows under test and an additional production of 255 pounds of milk and 13.9 pounds of butterfat from 1958.

ESTIMATED FARM VALUE OF ALBERTA MILK PRODUCTION 1959

The quantity, price, value and utilization of milk production during 1959 is reported in the following table. To indicate changes from the previous year the 1958 figures have been included.

	Year	Pounds	Milk Equivalent Pounds	Percent Total Milk	Price		Value
Butterfat for Creamery Butter*	1959	28,301,000	808,962,000	52.3	$ .659	per lb.	$18,650,000
	1958	28,148,000	803,252,000	52.0	.659	per lb.	18,556,000
Farm Dairy Butter	1959	2,448,000	57,283,000	3.7	.69	per lb.	1,469,000
	1958	2,643,000	61,846,000	4.0	.59	per lb.	1,559,000
Milk and Butterfat for Ice Cream (milk basis)	1959	....	56,729,000	3.7	2.80	per 100 lbs.	1,591,000
	1958	....	55,675,000	3.6	2.85	per 100 lbs.	1,586,000
Milk for Cheesemaking and Concentrating	1959	....	65,458,000	4.2	2.76	per 100 lbs.	1,804,000
	1958	....	65,490,000	4.2	2.73	per 100 lbs.	1,790,000
Milk Fluid Sales	1959	....	304,185,000	19.7	4.61	per 100 lbs.	14,035,000
	1958	....	294,733,000	19.1	4.61	per 100 lbs.	13,600,000
Cream Fluid Sales (milk basis)	1959	....	56,308,000	3.6	2.79	per 100 lbs.	1,570,000
	1958	....	53,670,000	3.5	2.82	per 100 lbs.	1,511,000
Milk Farm Home Consumed	1959	....	141,700,000	9.2	2.62	per 100 lbs.	3,713,000
	1958	....	151,400,000	9.8	2.62	per 100 lbs.	3,967,000
Fed Farm Animals	1959	....	56,210,000	3.6	2.62	per 100 lbs.	1,473,000
	1958	....	59,090,000	3.8	2.62	per 100 lbs.	1,548,000
Kept on Farms Skimmilk from Creamery Butter and Skimmilk and Buttermilk from Dairy Butter	1959	760,322,000	....	......	.35	per 100 lbs.	2,661,000
	1958	766,394,000	....	......	.35	per 100 lbs.	2,683,000
Total	1959	....	1,546,835,000	100.0	......		46,966,000
	1958	....	1,545,156,000	100.0	......		46,800,000

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*Includes butterfat used in the manufacture of butter oil.

ESTIMATED PRODUCTION AND VALUE OF FACTORY DAIRY PRODUCTS

The following table shows the quantity, price and value of dairy products manufactured or processed in Alberta dairy manufacturing plants during 1959 and 1958.

	Year	Quantity	Price	Value
Creamery Butter, lbs.	1959	34,315,000	$ .6275 per lb.	$21,533,000
	1958	34,327,000	.6250 per lb.	21,454,000
Cheddar Cheese, lbs. (including net increase in processing)	1959	1,577,000	.4445 per lb.	701,000
	1958	1,635,000	.3872 per lb.	633,000
Ice Cream, Gallons*	1959	3,337,000	1.74 per gal.	5,806,000
	1958	3,275,000	1.74 per gal.	5,698,000
Fluid Milk Sales, lb. (including processing charges)	1959	304,185,000	6.11 per 100 lbs.	18,586,000
	1958	294,733,000	6.01 per 100 lbs.	17,726,000
Cream as Milk, lbs, Fluid sales (including processing charges)	1959	56,308,000	4.29 per 100 lbs.	2,416,000
	1958	53,670,000	4.21 per 100 lbs.	2,262,000
Skimmilk and Buttermilk Sales for Human Consumpion (including processing charges)	1959	15,939,000	3.41 per 100 lbs	544,000
	1958	15,028,000	3.35 per 100 lbs.	503,000
Skimmilk, Buttermilk, lbs.	1959	41,667,000	.35 per 100 lbs.	146,000
	1958	42,867,000	.35 per 100 lbs.	150,000
Whey, lbs.	1959	13,142,000	.175 per 100 lbs	23,000
	1958	13,604,000	.175 per 100 lbs.	24,000
Miscellaneous Manufactured Products**	1959			4,076,000
	1958			3,709,000
Total	1959			53,831,000
	1958			52,159,000

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*Mix converted to Ice Cream on basis of 100% overrun.

**Includes concentrated milk products, cottage cheese, whey butter, cheese other than cheddar, yoghurt, butter oil and butter concentrates.

BRANCH EXTENSION ACTIVITIES

Meetings

Attendance at and addressing meetings of dairy producers, dairy cattle breeders, dairy plantmen, locker plant operators and Junior 4-H Clubs continues to play an important role in the activities of the Branch head, supervisors and to a lesser extent the inspectors. The provincial dairy convention and regional conferences for dairy plant workers were again organized by Branch officials in co-operation with the Alberta Dairymen's Association.

Branch representatives attended meetings of the Dairy Farmers of Canada, The National Dairy Council of Canada and The Associated Milk Foundations of Canada. These national organizations all held their annual meeting in Alberta during 1959.

Meetings with boards, committees, farm organizations groups as well as individuals in related work required considerable time on the part of senior Branch officials. The supervisor of Dairy Cattle Improvement attended a National Conference on Artificial Insemination at Toronto. Representatives of the Cost Study Division attended the Agricultural Institute of Canada meeting in Winnipeg and also an Agricultural Economics short course at Olds.

Publications

Press and radio news items were prepared for release through the Radio and Information Branch. Several circular letters were prepared and distributed to the dairy and frozen food industries. Two monthly newsletters, one on dairy production and the other on dairy processing and statistics are prepared and released to a large mailing list each month. A series of monthly illustrated leaflets dealing with quality milk production were prepared and distributed widely through dairy manufacturing plants to producers experiencing difficulty in securing top grades for milk and cream. Branch officials were represented on the committee which prepared the section on dairying for the "Alberta Farm Guide".

Diploma Course in Dairying

The Dairy Branch again co-operated with the Department of Dairy Science, University of Alberta and Canadian Vocational Training in organizing and conducting a six month Diploma Course in Dairying. This course commenced October 31, 1959 with seventeen students registering. It is the eighth such course which is now held every second year.

Short Courses for Milk Graders

Courses at Edmonton and Calgary were held during the early summer to instruct operators of milk transportation tanks. These tank operators require a license to grade milk and properly determine the weight of milk collected from each farm tank. Licenses are issued to personnel successful in passing practical and written examinations at the conclusion of these courses.

Check Weighing of Butter

Early in the year the Agricultural Stabilization Board announced a new plan whereby butter manufacturers could sell butter in substandard packages to the Board at approximately 4c below the support price. It was intended that the manufacturer would repurchase the butter from the Board during the season of short supply. This policy assisted the manufacturer in financing and storing butter for future requirements. Weight certificates were required under this plan and it became necessary to appoint check weighers at the larger centres where storage facilities were available. A total of 146 weight certificates were issued and 7,396 boxes were check weighed. These certificates covered a total of 3,442,452 pounds of creamery butter.

Staff Changes

A. F. Bennett, chief clerk, retired on superannuation March 22nd after almost 40 years of faithful, efficient service with the Dairy Branch. This position has now been filled by W. A. McGrath.

DAIRY PLANT INSPECTION AND INSTRUCTION SERVICE

Plants in Operation

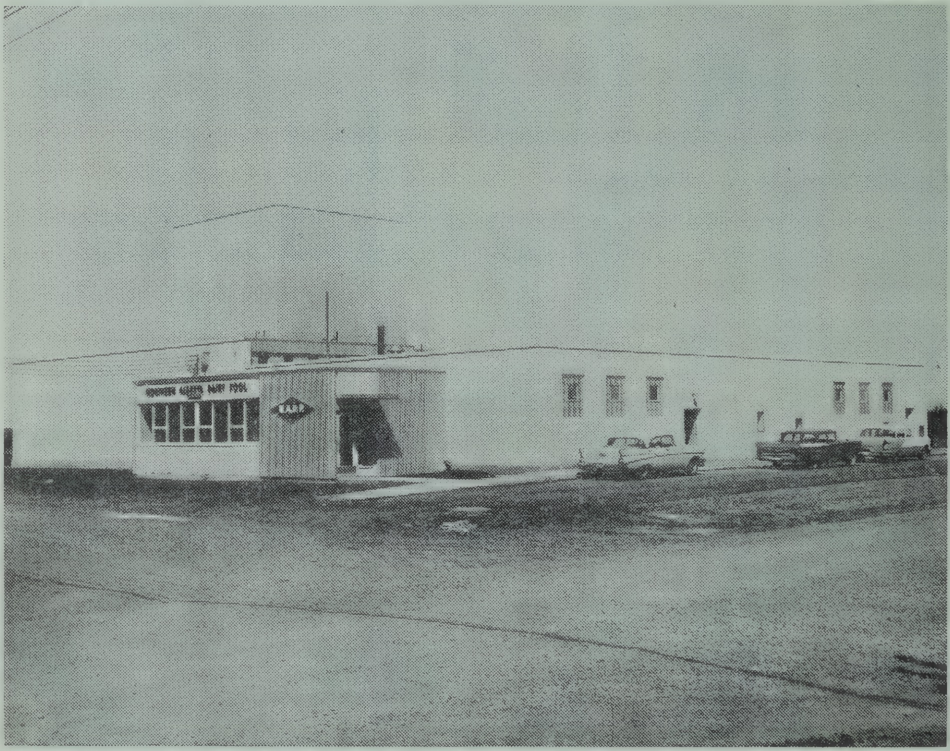
There were 125 dairy plants operating during 1959, of which 69 are purchasing both milk and cream from producers. Integration of some smaller milk processing plants with nearby larger operating units has taken place. Consumer demand for all that is new in processing and packaging of fluid milk, plus a careful appraisal of economic factors by operators is doing much to promote this action. Alpha Jersey Dairy, Calgary has absorbed the production and distribution of plants originally operated as City Dairy Limited, Drumheller; Brown's Dairy Limited, Drumheller; East Coulee Dairy, East Coulee and Didsbury Dairy, Didsbury. The new spray drying milk plant, the first of its kind in Alberta, established by the Northern Alberta Dairy Pool Limited at Camrose has absorbed the milk production of their cheese factory branch at

Bawlf. The creamery of Cardston Co-operative Limited has incorporated the milk processing and distribution business previously operated at Cardston by Smith Dairy. Bassano Dairy has discontinued its milk processing operation. The Edberg branch of the Central Alberta Dairy Pool discontinued operations at the year end.

Completely new plants were constructed and put into operation by Northern Alberta Dairy Pool Limited at Camrose, Union Milk Company Limited at Red Deer, Independent Creameries Limited at Lacombe, Grimshaw Dairy at Grimshaw and McLennan Dairy at McLennan. Elk Point Dairy Products Limited of Elk Point has also rebuilt and will be moving their operations to the new plant shortly after the beginning of 1960.

Renovations, extensions, rearranging of floor areas and installation of new equipment is continuing at most other plants as modern processing methods displace some of the older procedures.

NEW DAIRY PRODUCTS FOR ALBERTA



Exterior of the Northern Alberta Dairy Pool plant at Camrose which commenced operations July 1959. This plant adds further diversification to Alberta dairying by manufacturing spray dried skim milk powder and butter oil.

Inspections

The field staff of eleven inspectors completed 1,512 inspections on all plants during the year. Routine grading checks were made on 84,643 shipments of cream and official tests for butterfat content were run on 29,613 samples of milk and cream. In each instance where errors are detected in grading, testing, weighing or calculating the returns by dairy plant personnel, adjustments are required to assure a correct basis of payment for milk or cream purchased. Only 1.9% of the total number of grades and tests checked, required adjustments.

With the use of farm bulk tanks and milk transportation tanks well established, Dairy Branch inspectors are carrying out additional duties. First in checking calibration and installation of farm bulk tanks according to the 3-A Standards as incorporated in regulations under The Dairymen's Act and secondly in maintaining periodic checks on weights of milk in milk transportation tanks.

Licensing and Bonding

Yearly renewal of manufacturing license is made to each plant where minimum operating standards exists and where a satisfactory bond is supplied.

Personnel who are candidates for grading or testing licenses are required to pass a practical and written examination covering the operation for which qualification is needed. Permits for a limited period may be recommended by inspectors in instances where a candidate requires additional experience previous to examination. Renewal of yearly licenses for personnel is also subject to review before issue. Licenses issued during 1959 were as follows:

Form "A" (milk and cream testers)	274
Form "B(C)" (cream graders)	214
Form "B(M)" (plant milk graders)	163
(tank milk graders)	54
Form "C" (dairy manufacturing plants)	125
	830

Quality Control

The continuing application of quality tests to raw milk being purchased from producers has helped to raise the general quality level. A considerable increase in use of farm bulk cooling tanks, especially in milk shed areas, has also had the same effect.

In cream produced for creamery buttermaking, there has been a slightly higher percentage of the lower grades received at creameries than in the previous year. Unfavourable feed conditions commencing in the early fall has contributed mainly to this falling off in quality.

Competitions

Alberta dairy plants have made exceptionally good showings this year in open butter competitions with other provinces and countries. In each instance where out-of-province competitions were held, Dairy Branch personnel were responsible for assembling and despatching the various entries. A most outstanding award, the Andrew Clement Trophy, was won by the Northern Alberta Dairy Pool Limited, Edmonton when they exhibited the highest scoring butter sample in the Scottish Dairy Show at Glasgow, Scotland. The competitions at Glasgow are open to all Commonwealth countries and the British Isles. In the leading Canadian Exhibitions, Alberta creameries made an excellent showing. All but two of the special awards and trophies open to exhibitors in the butter competitions at the Canadian National Exhibition and the Royal Winter Fair, went to the Central Alberta Dairy Pool at Stettler. This is a remarkable showing never before achieved by any creamery at these shows.

Good workmanship by plantmen and producers throughout the year is encouraged by annually arranged competitions. Details of these competitions are worked out by the Dairy Branch in co-operation with The Alberta Dairymen's Association and the Canada Department of Agriculture. Prizes and special awards are presented to winners at the annual Dairy Convention. Most of the competitions are based on the results of regular analyses made by the Dairy Branch Laboratory or from the current records for butter and cheese grading by the Federal Graders.

The winners in the annual Ice Cream and Cottage Cheese Quality Competitions are decided by a panel of judges meeting quarterly at Calgary and Edmonton. Standard score cards for each product were averaged to arrive at final standings of each manufacturer.

In the Good Housekeeping Competition, preliminary scorings were made by local Dairy Branch inspectors. Final judgings to select overall winners were carried out by a headquarter's committee appointed from the Branch.

DAIRY CATTLE IMPROVEMENT SERVICE

Cow Testing

An all time record of 10,276 cows tested during 1959 with an average production of 10,346 pounds of milk and 361 pounds of butterfat highlight the report of this division.

During the year, 84 new herds and 1,567 cows were placed under test and 35 herds that were under test in 1958 did not continue testing in 1959.

The following graphs show the rapid increase in number of cows tested in recent years together with a steady substantial increase in production.

The larger number of cows under test presented clerical problems throughout the year. Calculation of monthly butterfat extensions at the various testing centres has helped to relieve some of the additional work load at headquarters.

(a) Mail Order Testing

Two plans of mail order testing were available to herd owners throughout the province. Plan I was based on the daily weighing of each cow's milk and a monthly butterfat test. Plan II was based on a computed milk production from one day's weighing and a monthly butterfat test. Samples of milk under Plan I and Plan II were lifted by herd owners on the 15th of each month. Samples were tested by Dairy Branch officials at testing centres and herd record books were checked, extended and returned by mail from the Dairy Branch office.

The following table shows the number of herds and cows tested under the mail order system during the past three years.

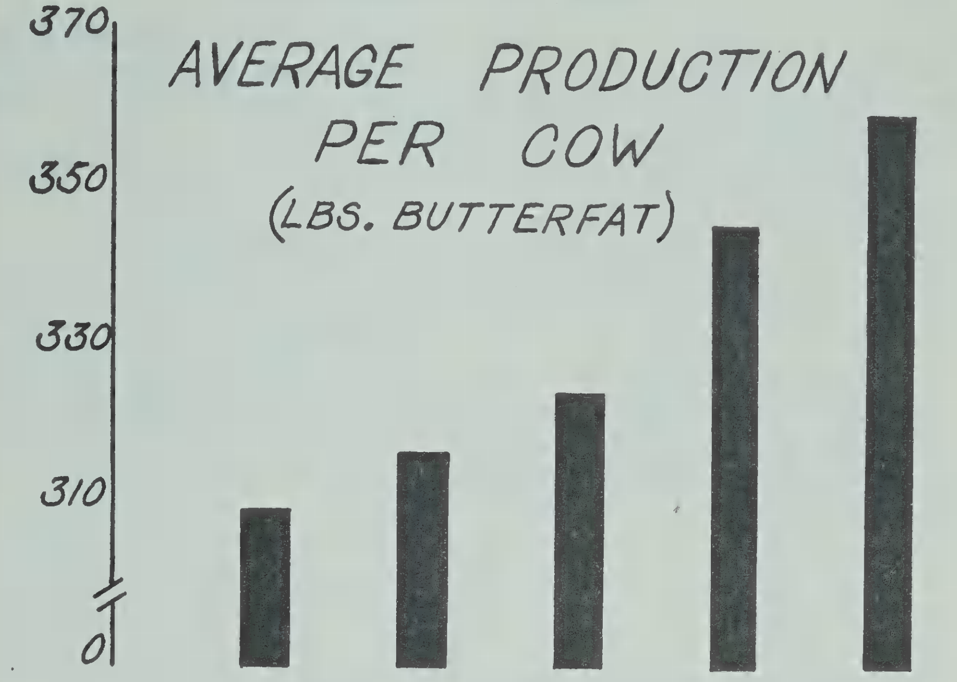
	No. of Herds			No. of Cows		
	1957	1958	1959	1957	1958	1959
Plan I	81	90	93	1,246	1,446	1,679
Plan II	156	191	231	3,377	4,140	5,163
Total	237	281	324	4,623	5,586	6,842

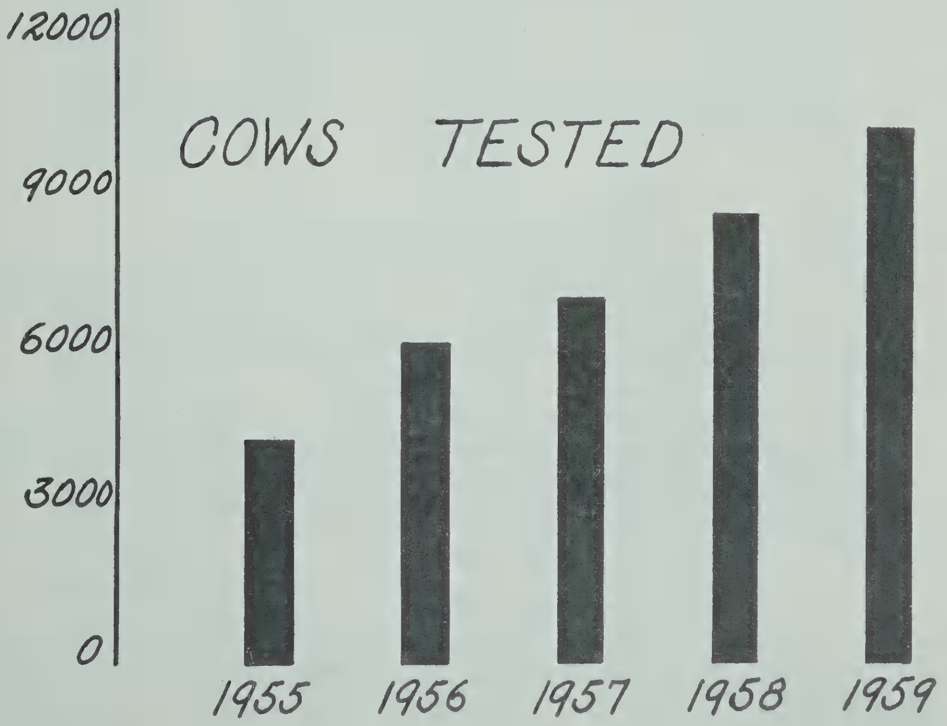
The average size of herd on the mail order system was 21 cows.

From the table it will be seen that 1,256 more cows in 78 more herds were tested under the mail order system during 1959 than in 1958. All but 3 of the 78 new herds enrolled under Plan II.

(b) Owner-Sampler Route Plan

This system of testing was offered in the Edmonton area. It differs from the Mail Order system in that a full time fieldman visited each herd owner monthly picking up the milk samples which were previously taken by the herd owner. There were six routes in operation during the year, with an average of 14 herds on each





route. Herd owners made use of either Plan I or Plan II as aforementioned. The fieldman at the time of his visit eartagged all heifer calves and made up an identification card showing color markings and eartag number. During the year, the fieldman assisted 60 herd owners to maintain permanent calf record books. A total of 730 heifer calves were identified and eartagged.

Throughout the year scales were checked for accuracy and assistance given in analyzing the herd records. A total of 12 new herds were put under test at which time samples were lifted by the fieldman and instruction on proper sampling procedure given. "Check-tests" were conducted at 7 farms. During the year a total of 972 farm visits were made by the fieldman.

The following table indicates the extent to which this system of testing was utilized.

	No. of Herds					No. of Cows				
	1955	1956	1957	1958	1959	1955	1956	1957	1958	1959
Plan I	7	5	4	2	4	133	97	90	59	176
Plan II	34	57	63	75	79	1,282	2,062	2,327	3,064	3,258
Total	41	62	67	77	83	1,415	2,159	2,417	3,123	3,434

There has been an increase every year in the number of herds and cows tested under this system. It will be noted that all but four herds were tested under Plan II.

The average size of herd on the "Route Plan" system of testing was 41 cows as compared to 40 in 1958.

Testing Centres

Testing centres were in operation at Edmonton, Ponoka, Red Deer, Calgary, Lethbridge and Fairview. Testing at the Edmonton centre was done by a full time laboratory technician assisted by the fieldman. At the other centres testing was done by the resident dairy inspector with assistance from part time clerical help.

The following table shows the number of tests conducted at each centre during the past three years.

Testing Centres	1957	1958	1959
Edmonton	28,568	34,676	36,986
Ponoka	7,880	9,343	11,159
Red Deer	8,525	10,406	11,921
Calgary	4,375	4,314	5,777
Lethbridge*	559	2,982	4,635
Fairview**	....	....	2,098
Total	49,907	61,721	72,576

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*Lethbridge centre commenced operation in August of 1957.

**Fairview centre commenced operation in December of 1958.

A 50% increase since 1957 in the amount of testing done at the centres has been possible due to the installation of better facilities and equipment along with part time clerical help referred to above.

The following table indicates the extent to which the two plans of testing were utilized by herd owners and shows the average production under each plan, together with the provincial average for all cows on test. Comparable figures for 1958 are shown in brackets.

SUMMARY

	Plan I*	Plan II**	Total
No. of herds under test	97 (92)	310 (266)	407 (358)
No. of cows under test	1,855 (1,505)	8,421 (7,204)	10,276 (8,709)
Average number of cows per herd	19.1 (16.4)	27.2 (27.1)	25.2 (24.3)
No. of cow years (T)	1,281 (1,089)	6,115 (5,178)	7,396 (6,267)
Average number of cow years per herd	13.2 (11.8)	19.7 (19.5)	18.2 (17.5)
Average production of milk (pounds)	10,196 (10,001)	10,377 (10,109)	10,346 (10,091)
Average production of butterfat (pounds)	365.6 (356.7)	360.2 (345.3)	361.2 (347.3)
Average test (%)	.... (..........)	.... (..........)	3.49 (3.44)

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*Plan I—Dairy weighing and monthly tests.

**Plan II—Computed records from one day's weighing and monthly tests.

(T) Herd averages on the basis of cow years. The total number of cows on test during the year is used in determining the herd average, except where new cows are placed on test, or a cow is sold or dies; in these cases only part of the year in which she produces is used.

From the table it will be noted that there was an increase of 49 herds and 1,567 cows over the year 1958. Average production of all cows on test shows an increase of 255 pounds of milk and 13.9 pounds of butterfat over 1958.

Reports and Competitions

Individual certificates of production were issued for all cows completing the necessary requirements respecting yields of butterfat and period of recording. Graded certificates received favorable acceptance and it is planned to issue all certificates on a graded basis during the year 1960.

Annual reports showing the total and average milk and butterfat production of the herd were sent to every herd owner. Copies of this report were forwarded to district agriculturists' offices.

The Honor Roll qualifications were raised to include only those herds of 5 cow years or more on test for a minimum of 8 months and producing over 400 pounds of butterfat. The higher standard has become necessary due to the increasing level of production of all herds in recent years.

A total of 77 herds qualified for the "Honor Roll" in 1959 as compared to 49 in 1958 when classified on the same basis.

Herd improvement and increased production was again encouraged in 1959 through competitions. Prize awards for the ten herds with the highest average butterfat production over the previous year were awarded at the Alberta Dairymen's Association convention. It was of interest to note here that the herd of W. Christie, South Edmonton won the highest average butterfat competition with a herd of 20 cows and a average production of 16,865 pounds of milk and 585.1 pounds of butterfat.

Other Activities

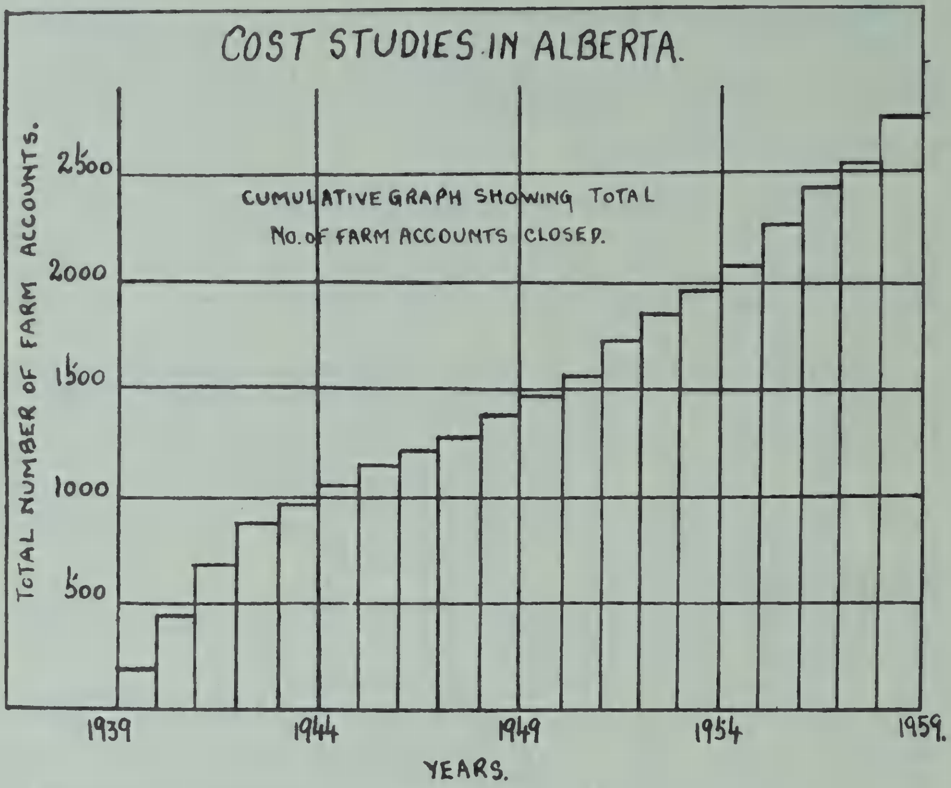
Continued expansion of the Cow Testing Service has necessitated an increase in the time spent on supervision, checking and correspondence.

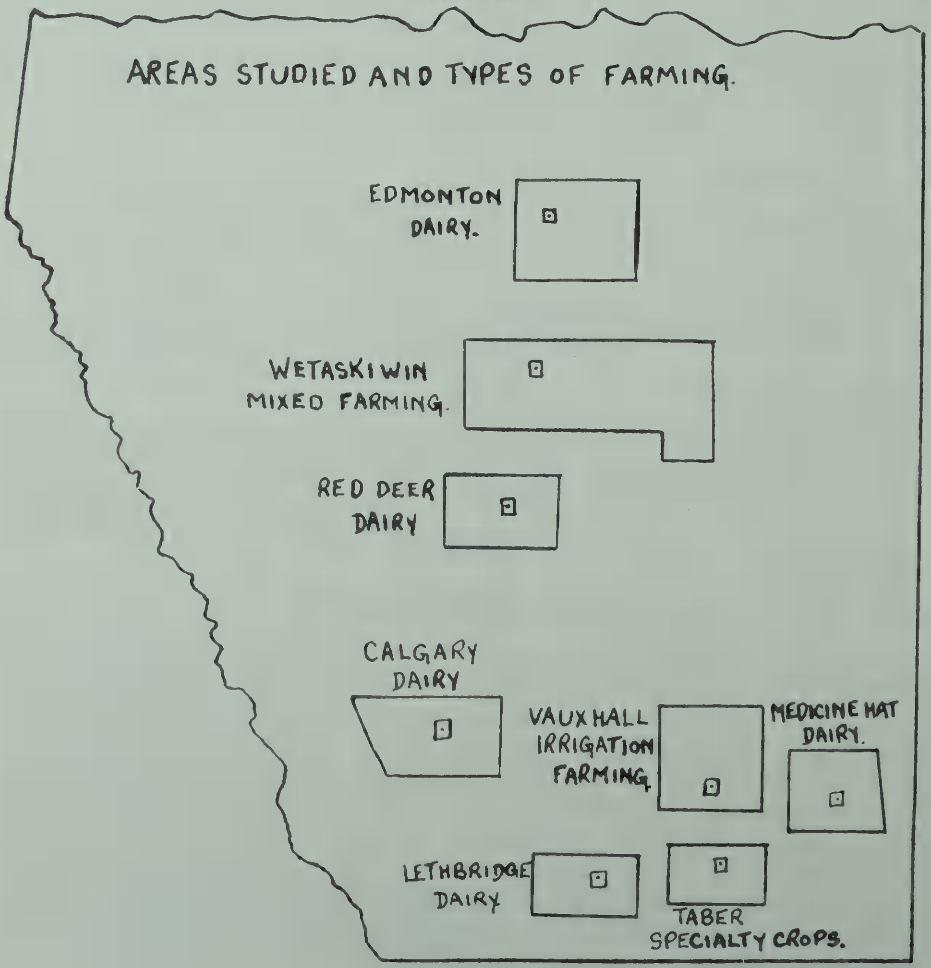
In addition to participating in the general extension activities of the Branch, considerable time was devoted to assisting artificial insemination units in the matter of bull selection and bull conception rates.

As in past years, the Supervisor was responsible for the purchase of the dairy bulls placed under the Cattle Improvement Policy. A total of 25 bulls were purchased during 1959. Assistance in locating and purchase of female breeding stock was given throughout the year.

FARM COST STUDIES

In 1959 the economic aspects of farm operation attracted wide attention as evidenced by the growing call for cost study information. This trend was expected as the province becomes more developed but it has been greatly accented by the continuity disparity in the rate of increase of farm costs as related to farm receipts. Major adjustments in the farm economy were occurring due to the effects of increasing industrialization on population movements. An ever increasing rate of technological change in farm facilities and practice occurred at the same time. Cost of production studies showing a complete analysis of the farm business along with details of efficiency appear to provide the most


COST STUDIES IN ALBERTA.
CUMULATIVE GRAPH SHOWING TOTAL No. OF FARM ACCOUNTS CLOSED.
TOTAL NUMBER OF FARM ACCOUNTS.
2500
2000
1500
1000
500
1939
1944
1949
1954
1959.
YEARS.


AREAS STUDIED AND TYPES OF FARMING.
EDMONTON DAIRY.
WETASKIWIN MIXED FARMING.
RED DEER DAIRY
CALGARY DAIRY
VAUXHALL IRRIGATION FARMING
MEDICINE HAT DAIRY.
LETHBRIDGE DAIRY
TABER SPECIALTY CROPS.

accurate and up to date information available in these changes which took place.

A total of 137 farm accounts were completed during the year. The classification and general location of these farms is as follows:

Edmonton fluid milk	33	Taber Specialty Crops	25
Calgary fluid milk	32	Vauxhall (irrigated)	34
Lethbridge fluid milk	13		

The accompanying graph shows the accumulation of farm accounts which were analyzed during the period 1939 to 1959. It will be noted that over 2,700 farm accounts were studied in total. The Economics Branch, Canada Department of Agriculture and the University of Alberta co-operated with the Alberta Department of Agriculture in carrying on the studies during the first five years.

In addition to the fluid milk studies other types of farming were studied in which several enterprises on each farm were costed separately. Some of these enterprises were production of churning cream, eggs, grain, beef and hogs. On specialty farms under irrigation, the enterprises included canning peas, canning corn and sugar beets.

Fluid Milk Studies

In addition to providing cost of production data on milk to the Board of Public Utility Commissioners, reports were returned to each individual farm on the four milk areas under study. The analysis showed the individual performance of each farm compared to the group average in that area for nearly one hundred items. This complete analysis of the farm business gave the dairyman detailed information on the economic position of his business and supplied standards of efficiency for his area. Thus a dairyman may progress to greater efficiency by cutting relative costs, increasing output or by a contribution of both.

The number of sample farms in the Edmonton and Calgary areas was increased during the year. Twenty additional farm accounts were undertaken to make up for farms being displaced by industry or going out of business for other reasons.

A formula for evaluating herd inventories was devised. There was a bare price established for a mature cow in terms of her production related to the group average. This was done by computing the average sale price of cows sold during the fiscal year and indexing this value by $10.00 per 100 pounds of milk production. This method has the advantage of establishing a close relationship to changing beef prices and also providing an evaluation in terms of the cows productive capacity.

Canning Crop and Specialty Crop Studies

The Taber irrigation study which began in 1954 has been carried on continuously for five years. Its general object was to define the economic conditions of growing irrigated specialty crops. Its particular object was to determine net returns for such crops and the effect of individual management efficiency on such returns.

The Canning Crop Growers Association originally made the request for the study. The main concern at the time centered in returns from the production of canning peas. The canning crop growers and sugar beet growers in the Taber area have supplied cost and income data as requested. The procedure followed was for a staff member to make personal visits to a group of representative farms to obtain complete accounts of individual farm operations. Following the analysis of all records for that particular group a mimeographed report was prepared and returned to co-operators with ratings and comparisons with group averages.

The five year program ended in 1958, thus drawing the study to a conclusion. All accounts were closed early in 1959 and analysis was concluded later in the year.

The number of enterprises costed over the duration of the study is as follows:

Year	Corn	Peas	Sugar Beets	Total
1954	23	15	24	62
1955	24	14	23	61
1956	23	18	24	65
1957	21	15	24	60
1958	17	16	23	56
	108	78	118	304

In the conduct of the study, interviews were held and plant visits made with both canning crop and sugar beet processors at Taber.

The 1958 annual summary of results has been prepared and will be distributed early in 1960. The preparation of an analysis of the five year study is well underway and should be completed shortly.

LABORATORY SERVICE

A significant change in policy regarding laboratory services to dairy plants came into effect during the year. On February 1, 1959, the Provincial Laboratories in Edmonton and Calgary discontinued the examination of dairy products, leaving the Dairy Branch Laboratory as the sole agency for that type of testing. The change was made in order to avoid duplication, to improve the service and to utilize technicians and material to better advantage.

During the year, the laboratory co-operated with the Provincial Department of Public Health in screening milk samples for the presence of Q-fever.

These developments added considerably to the work of the laboratory as indicated in the following table giving the number and types of material submitted for analysis as compared to that of 1958.

	No. of Samples	
	1959	1958
Butter samples for mould and yeast	3,536	3,721
Bacteriological creamery survey samples	70	87
Butter samples for pH determination	1,613	1,651
Milk control service	11,094	7,864
Mastitis control service	4,854	4,065
Egg products	719	442
Cheese samples	38	22
Ice cream samples	381	214
Milk samples for Q-fever	4,048	0
Miscellaneous	415	305
	26,768	18,366

Butter

During the year the laboratory maintained close contact with the creameries and made regular mould and yeast counts on representative churnings of butter manufactured at all plants. The minimum number of churnings examined for each plant is three per month and where the need arose, additional churnings were checked. At a few plants, in co-operation with the field staff of the Dairy Branch, it was found necessary to make a complete survey of the manufacturing procedure in order to detect faulty sterilization of equipment. The fact that practically no butter defects of microbial origin were observed in Alberta butter during the year indicates that the control measures taken were effective.

Considerable assistance was given to buttermakers in controlling the acidity or pH of the butter. While many of the buttermakers are to be commended for keeping the pH of the butter within the desirable pH range of 6.95 to 7.30, some were less successful in that respect as indicated in the following summary of the 1,613 churnings examined.

pH Range	% of Churnings Tested
Below 6.95	23.06
Between 6.95 and 7.30	48.48
Over 7.30	28.46

Milk

The consolidation of laboratory services for dairy products which took place during the early part of the year made it possible to organize the work on an efficient basis and to avoid duplication.

The difficulties that might be anticipated in a changeover of this nature were largely avoided due to the whole hearted support of those involved in the merger.

Improvement of the raw milk supply has been stressed as judged by the standard plate count. This, together with the introduction of the farm bulk tank, brought about a significant improvement in the quality of the raw milk supply received at many plants.

The submitting of samples other than fluid milk was encouraged with the result that a relatively large number of such dairy products as 10% cream, whipping cream, chocolate drink, buttermilk and ice cream were submitted for examination.

Mastitis

For the third successive year, there was a significant increase in the number of herds utilizing the Provincial Mastitis Program. In nearly every case, the application has come through the local veterinarian who supervised the sampling and prescribed required treatments. In many instances there was a gratifying response to treatment and with proper herd management it is hoped that the improvement will be permanent.

The rate of infection has remained approximately the same during the last few years. For 1959 the figures are as follows:

Negative quarters	59.1%
Questionable quarters	11.1%
Infected quarters	29.8%

It was observed that lately there has been a shift in the type of infection. Mastitis caused by Streptococci organisms was relatively less prevalent while that caused by Staphylococci was on the increase. Another observation was that some of the earlier antibiotics such as penicillin and streptomycin were becoming less effective when measured by laboratory sensitivity readings.

Eggs

These samples were all received through the Poultry Marketing Service of the Canada Department of Agriculture. The increase in samples over that of the previous year reflected the relatively higher returns from processed eggs compared to that of eggs sold in the shell.

Cheese

Under this heading only a few samples were received. In most cases, the examination involved such chemical tests as determination of moisture, fat, salt and pH.

Closely associated with cheese was the starter service which provided Alberta cheese factories with a bacterial culture necessary in the manufacture of cheddar cheese. This service was provided at the rate of 50 cents per culture. During 1959, a total of 375 cultures were supplied to cheese factories.

Ice Cream

There has been a marked increase in the number of ice cream samples submitted. Sanitary inspectors of the Local Health Units lifted many samples at country points as a check on the retailers' methods of handling this product. Samples were also received regularly from some of the ice cream manufacturers and as in past years, all samples were tested in connection with the Provincial Ice Cream Competition.

Miscellaneous

Under this heading there was a variety of material such as, milk samples to be examined for presence of antibiotics or preservatives, milk powder for chemical as well as bacteriological tests, whey and starter culture to be examined for bacteriophage, detergents and sanitizers to be checked for strength, cream samples for flavour defects, etc. The practise of furnishing free of cost such solutions and indicators as were needed in the operation of dairy factories was continued. The Supervisor spent an increasing amount of time on correspondence as well as consultation on dairy problems.

FROZEN FOOD LOCKER PLANTS

Locker rentals again declined during the year under review. This decline was fairly heavy during the early months, however, due to heavy volume of big game received for processing there was a quite sharp increase of rentals during the fall months. As in the past few years, the decline in rentals was mainly due to the increasing popularity and sale of home freezers. The total volume of processing for lockers and home freezers increased to 19.3 million pounds for an all time record.

Extensive alterations were made to several plants. These reduced the capacity of the locker rooms and increased the processing and retail areas to handle the increased volume of processing and the storage of frozen foods for home freezers. A few operators constructed new slaughter houses during the year, while others remodelled their plants to meet the requirements of the Department of Health.

Locker plants at Brooks, Cowley and Wainwright discontinued operations during the year. A complete service plant located on the outskirts of Vegreville was put into operation in April. There were 141 plants operating at December 1st.

Inspection Services

A total of 1,108 inspections of frozen food locker plants were carried out by eleven inspectors under the direction of the Supervisor. In addition the Supervisor visited all plants at least once during the year. Operators were given assistance in the planning for remodelling or construction of new plants and slaughter houses. The Supervisor also inspected a few slaughter houses with the local health inspectors.

The regulation requiring a minimum of 150 lockers was amended by Order-in-Council to require locker plants to provide sufficient low temperature storage space as the Minister may prescribe.

The following table outlines the trend of the locker plant industry since the Frozen Food Locker Act became effective in 1944.

Year	No. of Plants Operating	No. of Lockers Installed	No. of Lockers Rented	Percent of Lockers Rented	Average Lbs. Per Rented Locker
1944	34	8,966	....	No Record	....
1945	61	16,770	13,572	80.9	326.0
1946	83	22,421	18,640	83.1	308.3
1947	97	28,109	25,241	89.8	348.0
1948	118	35,571	32,616	91.7	359.2
1949	134	44,020	40,871	92.8	328.8
1950	141	48,647	43,802	90.0	305.2
1951	146	50,316	45,757	90.9	312.2
1952	148	51,617	48,617	94.2	353.3
1953	153	52,999	49,305	93.0	320.2
1954	154	51,984	46,560	89.6	316.9
1955	153	51,488	43,608	84.7	307.9
1956	148	49,304	40,159	81.5	320.5
1957	144	47,972	39,762	82.9	329.6
1958	143	44,196	32,992	74.6	322.1
1959	141	40,169	29,077	72.4	356.4

It will be noted that the number of operating plants and available lockers increased rapidly until 1953 with a gradual decline since that time. This change was brought about by the increasing sale of home freezers.

The following tables show the amount and type of food products stored in lockers from 1944 to 1959 and also that processed for home freezers since 1953.

Year	Pounds Stored Lockers	Meat %	Fish %	Poultry %	Game Birds %	Big Game %	Cured Meats %	Lard %	Fruits %	Veg. %	Misc. %
1944					No Record						
1945	3,902,294	79.1	.8	6.4	.7	1.5	7.3	.5	1.9	1.7	.1
1946	5,171,026	75.7	1.0	6.6	.8	1.7	9.1	.7	2.3	1.7	.4
1947	7,782,419	74.4	.8	6.3	.7	1.5	12.0	1.2	1.3	1.3	.5
1948	10,353,430	75.7	.6	5.3	.7	.9	11.8	1.2	1.9	1.4	.5
1949	12,460,243	75.9	1.2	6.0	.6	1.8	10.1	1.1	1.3	1.2	.8
1950	12,895,363	75.3	.9	6.3	.6	.9	11.0	1.2	1.5	1.5	.8
1951	13,859,897	74.0	1.0	7.7	.6	.8	10.7	1.2	1.4	1.8	.8
1952	16,795,135	75.2	.8	6.7	.6	1.1	10.6	1.2	1.2	1.8	.8
1953	15,782,184	79.3	.7	6.7	.4	.4	8.1	1.0	1.0	1.8	.6
1954	14,919,055	81.0	.7	6.8	.4	.8	6.7	.9	.7	1.4	.6
1955	13,760,124	79.1	.4	6.8	.5	1.7	7.6	1.0	.6	1.8	.5
1956	12,792,131	78.7	.4	5.8	.4	2.9	7.6	1.1	.7	1.8	.6
1957	11,984,904	79.9	.4	6.7	.5	2.5	6.4	1.9	.6	1.5	.6
1958	10,639,199	79.9	.4	6.2	.5	2.9	7.9	1.1	.6	1.9	.6
1959	10,438,517	76.2	.4	5.3	.2	3.8	10.6	1.2	.5	1.2	.6
PROCESSED FOR HOME FREEZERS											
1953	1,534,919	76.5	1.2	1.3	.1	.1	4.0	.3	4.5	5.4	6.6
1954	2,299,791	83.8	.7	1.3	.0	.2	4.1	.3	3.0	3,6	3.0
1955	2,021,656	76.0	1.0	1.6	.1	.6	6.3	.5	5.1	4.7	4.1
1956	2,822,306	78.9	1.0	1.6	.0	.6	6.2	.6	4.3	3.5	3.3
1957	4,008,646	80.8	.8	1.4	.1	.7	5.4	1.1	3.8	2.8	3.1
1958	6,072,067	78.5	.9	1.7	.3	1.0	7.5	1.2	3.0	2.9	3.0
1959	8,949,798	78.3	.7	1.0	.1	1.4	10.2	1.6	2.3	2.1	2.3

TOTAL VOLUME PROCESSED FOR LOCKERS AND HOME FREEZERS

	pounds		pounds
1953	17,317,103	1957	15,993,550
1954	17,218,846	1958	16,711,266
1955	15,781,780	1959	19,388,315
1956	15,614,437		

The above tables indicate the trend in volume of processing for lockers and home freezers. The volume of processing for lockers has gradually declined, however, this decline was less in 1959 than in any of the five previous years. The increased volume of processing for home freezers was very substantial resulting in an overall increase for both lockers and home freezers of over 2½ million pounds. The volume of processing in 1959 was the highest for any year since the industry was established. The average pounds of food processed per locker increased from 322 pounds to 356 pounds during the past year. This indicates that locker and home freezer patrons were utilizing to a greater extent the services offered at locker plants.

The scoring of all plants for the Merit Award Competitions and Proficiency Certificates was again carried out by the inspectors of the Dairy Branch. The top plants in each district were given a final score by the Dairy Commissioner and the Supervisor.

Winners of the 1958 competitions were announced and presented with trophies and certificates at the annual convention of the Alberta Quick Freeze Locker Association held at Edmonton in February 1959. The shield for Section A (plants with over 400 lockers) was won by Central Alberta Dairy Pool, Rimbey. Taber Frozen Foods and Wolch's Frozen Food Locker Company, Edmonton placed second and third respectively in this section. Spoor's Meat Market of Rocky Mountain House won Section B (less than 400 lockers) while the Peace River Meat Company, Sexsmith and Ben F. Shaw Limited of Athabasca placed second and third respectively in this section.

There were 33 Proficiency Certificates awarded to operators compared to 38 for the previous year. These certificates are issued to operators for operating their plants in an efficient manner and instigating good housekeeping standards.

The following statistics are tabulated from monthly reports received from the operators and cover the 12 month period ending November 30, 1959. Statistics for the previous 12 months are included for comparison.

LOCKER PLANT OPERATIONS

	1959	1958
No. of Animal food plants	3	4
No. of plants in operation December 1st	141	143
No. of plants reporting during 1959	144	144
No. of lockers installed	40,169	44,196
Average number of lockers installed	281	307
No. of lockers rented December 1st	29,077	32,992
Percentage of lockers rented December 1st	72.4	74.6
Average lbs. of food stored per locker with complete service	361.6	334.2
Average lbs. of food stored per locker with incomplete service	234.1	182.4
Average poundage per locker—all plants	351.1	319.8
Average lbs. per locker on the basis of lockers rented for 12 months	356.4	322.1
Inspections during the year	1,108	1,158

Milk Control Report

Submitted by the

BOARD OF PUBLIC UTILITY COMMISSIONERS

J. B. MOORE, Administrator of Milk Control

Fluid milk consumption during 1959 increased in the areas of Calgary, Edmonton, Lethbridge, Medicine Hat, Ponoka and Red Deer. The percentage increases were respectively; 4.3%, 1.9%, .6%, 5.9%, 11.9% and 9.1%. Decreases of 3.4% and 16.6% were reported in Camrose and the Crow's Nest Pass.

Production increased in all areas with the exception of Camrose.

Licensed milk producers declined by 2, to a total of 913.

The number of distributors increased by one with the granting of an additional license in the Calgary Area.

Orders Nos. 24041, 24042, 24086, 24194, 24195 and 24209 were issued by the Board relevant to fluid milk.

The Board continued its active and financial support of both the Dairy Cost Survey and Milk Foundation.

The Board was represented at two Executive meetings of the International Milk Control Agencies, one meeting being held March 31st, 1959 in New York, the other in Toronto during the early part of December, 1959.

Report of the Poultry Branch

R. H. McMILLAN, Poultry Commissioner
G. R. Milne, Poultry Supervisor

Inspectors:

K. Darlington	West Edmonton	J. L. Plumley	Red Deer
K. H. Rowe	East Edmonton	Wm. Hutchison	Calgary
G. O. Johnson	Camrose	G. E. Patsula	Fairview

GENERAL REVIEW

Expansion of poultry production in 1959 showed a continued trend to larger, more economic units and resultant specialization in the production of commercial eggs, broilers and turkeys. The "cost-price" squeeze in poultry production has pressed many smaller producers to either expand their operation to an economic unit or to maintain a family flock only.

Poultry production increased 17.8% over that of 1958. Inspectors noted a continued and somewhat accelerated movement of imported strains of poults into the province. The increase in turkey tonnage marketed which was expected, due to increased poult sales, did not materialize as turkey growers marketed their birds at lighter than previous years' weights. Increased interests in turkey broiler production was noted and a significant number of poults were hatched for this market. Eggs for breeding stock suitable for turkey broiler production were imported mostly from the United States.

Import controls and price support for turkeys continued in effect in 1959. As a result of the import controls the domestic price of turkey remained above floor level and application of support prices was not required. The price received by growers averaged 6c a pound less than 1958. With lower prices to consumers relative to other meats and an all-out effort by retailers, turkey moved readily with a possibility of a shortage resulting locally for the first half of 1960.

Fowl marketings were 25% less than in 1958 and prices to producers comparable to 1958. Fowl is generally considered a by-product of egg production and prices received by producers is low and has remained fairly constant for the past few years.

Chicken broiler production increased 25.3% over that of 1958 and prices received by producers averaged 3c a pound lower. Although Alberta does not produce a surplus of broilers, the entire output, together with some imports was consumed locally, and the lower prices received by producers resulted from over production in Ontario specifically and the United States. The possibility or threat of product from surplus producing areas depresses local prices.

Integration, particularly with broiler and turkey production, in varying degrees appeared more prevalent. A trend toward contract production was noted.

There were two additional poultry processing plants opened during 1959 making a total of 8 plants operating under Health of Animals and 4 under Provincial Requirements. Three of the larger plants installed liquid freezing facilities which greatly relieved the freezing and cold storage problem prevalent the past two years.

Total production of commercial eggs in the province was reduced from that of 1958. However, the number of specialized commercial egg producers increased considerably. The demand by consumers and retailers for a "quality" egg was very evident throughout the year. A survey of producer vendors, in excess of 200, revealed that these specialized producers marketed 59,926—30 dozen cases, or 13% of eggs consumed in the province. It is of interest to note that the average flock size of these producers is 1036 laying birds, with several of 5,000 or better, as compared to the provincial average of approximately 60 laying birds. A definite preference for white shelled eggs is indicated by the fact that 88.8% of birds, maintained by producer vendors, produce a white egg.

It is estimated that the volume of product marketed by producer vendors increased 20% over 1958.

In 1959 the Agricultural Stabilization Board ceased offers to purchase and discontinued price support as such. Replacing this program a deficiency payment scheme was inagurated, designed to curb production. Under the program, a producer was eligible for a deficiency payment on 4,000 dozen Grade A large eggs in any one calendar year, should the national average price drop below a predetermined level. Such a payment, if declared, was uniform to producers across Canada regardless of the price any individual received. To date, approximately 40% of Alberta egg producers registered for participation in the program.

Since October 1, 1959, when this plan became effective, Grade A large eggs dropped in price to producers from 42c per dozen to 15c per dozen by the end of the year. Although there was no surplus in Alberta, lack of export markets and over production in other provinces forced local prices downward.

FLOCK APPROVAL

The inspection of chicken and turkey hatching egg supply flocks continue to be a major project of the Poultry Branch. To complete the greater part of this work between September and December, ten temporary fieldmen were employed. In addition, the expanding broiler industry, while providing an all year program for some flock owners and hatchery operators, is extending the flock inspection phase of the branch activities throughout most of the year.

TABLE I

FLOCK APPROVAL BY MONTH

	1958		1959	
	No. Flocks	No. Females	No. Flocks	No. Females
January	33	12,549	31	12,887
February	10	3,080	10	6,047
March	1	142	4	2,554
April	3	1,755	10	5,962
May	3	2,635	9	6,591
June	5	1,357	7	3,874
July	9	4,081	20	11,066
August	40	18,859	23	10,939
September	229	87,989	146	59,634
October	324	111,328	362	103,089
November	225	79,060	177	76,278
December	123	34,411	154	61,509

TABLE II

	Egg Production Matings			Broiler Production Matings		
	No. Flocks	No. Birds	Av. Size	No. Flocks	No. Birds	Av. Size
1956	991	343,538	346	65	25,896	398
1957	915	342,009	373	98	46,510	474
1958	752	304,645	405	92	48,861	531
1959	665	264,989	398	181	94,698	523

All hatching eggs set in licensed hatcheries must be from inspected and pullorum disease free flocks.

Table III summarizes the number of flocks and birds inspected and tested for pullorum disease.

TABLE III

SUMMARY OF FLOCK APPROVAL 1954-1959

(First Test on Completed Flocks)

Year	Method of Testing	No. of Flocks	No. of Birds	Av. Size of Flock	% Reaction
1954-56	Whole Blood	1,043	319,501	309	.211
1955-56	" "	989	318,492	322	.221
1956-57	" "	1,056	369,434	349	.098
1957-58	" "	1,022	404,233	394	.043
1958-59	" "	958	382,130	398	.057

Rating of hatching egg supply flocks continued in 1959, with further general improvement noted.

	% Rating	% of Flocks 1957	1958	1959
Group I	Over 80	10	14	16
Group II	70 - 79	44	56	61
Group III	60 - 69	38	28	22
Group IV	Under 60	8	2	1

Flock owners in Group IV were notified that they would not be permitted to ship hatching eggs until conditions on premises were improved. A number of these did bring their premises up to satisfactory standards for acceptance as a supply flock for hatching eggs.

Table IV summarizes total turkey flocks and turkeys inspected and tested.

TABLE IV

SUMMARY OF TURKEY APPROVAL 1956-1959

Year	No. of Flocks	No. of Birds	Av. Size of Flock
1956	45	25,802	573
1957	38	29,422	774
1958	42	38,493	916
1959	32	34,999	1,093

The number of flocks inspected decreased by 10 flocks, while the number of birds tested decreased by 3,494 birds. The average flock size increased by 177 birds.

TABLE V

SUMMARY OF FLOCK APPROVAL BY BREED 1958-1959

Chickens

Breed	No. of Flocks Tested	No. of Birds Tested
White Leghorns	139	55,552
New Hampshires	74	24,019
Light Sussex	121	37,823
White Rocks	63	20,140
Barred Rocks	26	11,102
Rhode Island Reds	35	13,620
Black Australorps	11	2,931
All Other Varieties	41	13,171
Total	798	293,618

Single Comb White Leghorn and leghorn type were most popular females used for matings accounting for 18.9% with Light Sussex, New Hampshire and White Rock females following at 12.8%, 8.1%, 6.8% respectively. Franchised imported egg production strains accounted for an estimated 30 - 35% of total chicks sold for this purpose. Broiler production matings were 50.5% New Hampshire and 48.9% White Plymouth Rock.

Turkeys

Breed	No. of Flocks Tested	No. of Birds Tested
Broad Breasted Bronze	30	33,089
White Lancaster		
Beltsville Whites	2	1,910
Total	32	34,999

LICENSING AND BONDING OF DEALERS IN POULTRY AND POULTRY PRODUCTS

A. **Produce**—The Poultry Branch administers regulations respecting the Licensing and Bonding of Dealers in Poultry and Poultry Products under the Alberta Live Stock and Live Stock Products Act. Every person carrying on a business as a dealer must obtain a license to conduct such business. As of January 1, 1956, as protection to producers, all wholesale dealers were required to furnish a surety bond in favor of the Minister ranging from $1,000 to $10,000, depending upon the volume of business conducted.

TABLE VI

Year	First Receivers	Reg. Egg Grading Stations	Reg. Poultry Processing Stations	Reg. Poultry Eviscerating Stations	Reg. Poultry Grading Stations	Temporary Grading Stations
1955	70	146	21	9	6	6
1956	46	140	21	8	[illegible]	4
1957	33	141	22	10	8	3
1958	21	144	24	10	9	3
1959	17	142	26	12	8	3

B. **Hatchery**—The Poultry Branch administers regulations repecting the Production and Sale of Chicks under the Alberta Live Stock and Live Stock Products Act. All commercial and custom hatcheries with an incubator capacity of 1,000 eggs or more are licensed. Since 1951 commercial hatcheries are required to furnish a surety bond, in favor of the Minister, for protection of hatching egg producers, ranging from $2,000 to $5,000, depending upon incubator capacity.

TABLE VII

DEVELOPMENT OF HATCHERIES

Year	Breeder Hatcheries	Commercial Hatcheries	Egg Setting Capacity
1955	12	49	4,103,088
1956	14	51	4,466,034
1957	13	52	4,698,818
1958	10	50	4,614,423
1959	8	50	4,807,462

TABLE VIII

CHICK DISPOSITION

Year	% Hatchability	Chicks Hatched	Chicks Not Sold	Chicks Exported	Chicks Imported	Chicks remaining in Province
1955	69.3	8,212,591	497,055	298,997	369,423	7,785,962
1956	69.0	9,495,784	577,267	279,728	346,574	8,985,363
1957	69.05	11,167,818	630,880	365,290	244,848	10,416,496
1958	69.8	11,454,597	727,795	581,018	310,951	10,456,735
1959	70.9	11,710,464	613,173	600,475	474,379	10,971,195

TABLE IX

CHICK PRODUCTION BY TYPE

For Egg Production Type			For Broiler Production Type		
1959	1958	% Change	1959	1958	% Change
7,933,553	8,440,888	—6.0%	3,776,911	3,013,709	25.3%

Poultry production in Alberta hatcheries again reached an all time high in 1959 of 1,470,164 poults, an increase of 26.5% over 1958.

TABLE X

POULT PRODUCTION

Year	Eggs Set	Eggs Imported	Poults Hatched	% Hatchability	Poults Imported	Poults Exported	Poults on Alberta Farms
1955	1,070,690	374,573	538,014	50.3%	64,994	6,905	596,103
1956	1,535,611	450,000	809,459	52.7%	197,770	8,280	998,949
1957	1,763,449	592,150	1,006,734	57.1%	83,461	39,906	1,050,289
1958	2,011,546	924,591	1,162,178	58.8%	43,515	90,564	1,115,129
1959	2,593,650	1,222,124	1,470,164	56.6%	166,571	13,750	1,622,985

Importation of breeding stock in the form of U.S. franchises is still increasing. This past season there were 25 different franchises offered for sale as compared to 21 in 1958 and 14 in 1957. It is estimated that 2,500,000 egg production chicks, 3,600,000 broiler production chicks, and 880,000 poults were sold in Alberta from this stock in 1959.

TABLE XI

IMPORTATION FROM THE UNITED STATES

1959

	Chicken				Turkey			
	From Egg Production Matings		From Broiler Production Matings		From Meat Production Matings		From Broiler Production Matings	
	Eggs	Chicks	Eggs	Chicks	Eggs	Poults	Eggs	Poults
Jan.				1,756	7,200	......	6,000	......
Feb.	10,080	2,650	31,860	1,494	373,920	......	13,600	......
Mar.	20,820	31,004	61,200	18,910	351,320	......	5,000	......
Apr.	11,880	17,614	42,120	8,682	245,730		29,280	......
May	......	50	28,380	2,560	5,280	1,600		......
June	......	3,727	25,020	10,350	7,200	......	100	......
July	......	......	2,160	1,044	......	......	3,000	......
Aug.	......	......	......		......	......	......	......
Sept.	3,960	1,000		400	......	......	......	......
Oct.	......	......	9,000	850	......	......	......	......
Nov.	......	......	13,320	630	......	......	......	......
Dec.	......	......	22,680	1,067	......	......	......	......
Total	46,740	56,045	235,740	47,743	990,650	1,600	56,980	......

THE POULTRY INDUSTRY

Egg production in 1959 decreased approximately 7.7% to an estimated total of 36,700,000 dozen eggs. Egg marketings at registered egg grading stations are indicated in Table XII. These receipts represent about 44% of the total production, the balance being sold direct by the producer, or farm consumed or used for hatching purposes. Weighted egg price to producers dropped slightly over 1 cent compared to 1958.

TABLE XII

	Egg Receipts at Registered Egg Grading Stations (30 dozen cases)	Weighted Egg Price to Producers by Grade Per Dozen
1955	548,215	31.8 cents
1956	597,380	31.9 cents
1957	676,709	26.4 cents
1958	652,180	25.6 cents
1959 (Est.)	535,720	25.0 cents

Trends in marketing of poultry meat and turkey meat are indicated in Tables XIII and XIV.

TABLE XIII

POULTRY MARKETINGS THROUGH REGISTERED STATIONS

(Pounds)

Year	Chickens		Fowl	Turkeys	Ducks	Geese
	Under 4 lb.	Over 4 lb.				
1955	1,726,485	1,316,711	3,148,113	5,904,921	97,205	473,119
1956	3,261,360	1,747,498	3,418,065	9,215,831	80,277	333,901
1957	4,129,761	1,987,221	4,220,058	10,656,603	70,905	565,705
1958	4,383,000	2,096,000	3,860,000	9,651,000	45,000	453,000
1959	6,450,608	1,573,157	3,570,034	10,697,190	43,929	374,729

TABLE XIV

POULTRY EVISCERATED IN REGISTERED STATIONS

(Pounds)

Year	Chickens Under 4 lb.	Chickens Over 4 lb.	Fowl	Turkeys	Ducks	Geese
1955	1,583,976	623,686	1,001,896	2,855,950	15,386	79,478
1956	2,682,148	1,158,402	1,575,042	6,297,954	30,836	116,455
1957	4,363,666	1,559,538	3,181,891	6,881,831	56,643	271,931
1958	3,821,000	1,245,000	2,312,000	7,481,000	25,000	294,000
1959	5,628,526	1,134,345	2,059,150	8,722,805	29,810	313,158

The laying hen numbers and market turkey numbers on Alberta farms is indicated in Table XV.

TABLE XV

FARM POPULATION

Year	Laying Hens	Turkeys
1955—Inter census revision not available	2,850,000	570,000
1956—Census (D.B.S.)	2,642,494	820,154
1957—Estimate (D.B.S.)	2,900,000	860,000
1958—Estimate (D.B.S.)	3,010,000	975,000
1959—Estimate	2,925,000	1,056,000

ALBERTA RANDOM SAMPLE TEST

The second Alberta Random Sample Test was completed on August 13, 1959. The Alberta Random Sample Test was set up to evaluate and compare breed and strain crosses of poultry that are available to the Alberta farmer. This test is a 500 day egg production test gathering data from incubation through twelve months of lay.

Twenty-four applications were received for the second test from breeders in Canada and the United States. As accommodation was limited to eleven entries, applications were accepted first from Alberta breeders and then from Canadian and American breeders based on their volume of chick sales in Alberta. Each entry consisted of 30 dozen hatching eggs from which a maximum of 100 pullets were tested.

Housing, management and feeding practices are kept as uniform as possible throughout the test buildings, so that when differences show up between entries, these differences may be attributed mainly to the genetic makeup of the entry. The following table indicates the performance of the entries in some of the economic factors tested for:

TABLE XVI

SECOND ALBERTA RANDOM SAMPLE TEST

Entrant	Egg Prod. Per Hen Housed	% Grade A Large Eggs	% Laying House Mortality	Lb. Feed Per Doz. Eggs	Net Income Per hen Housed
1	206.3	57.8	20.0	5.0	1.48
2	204.5	56.8	14.8	5.1	1.42
3	211.2	57.3	15.0	4.5	1.59
4	233.9	61.0	3.0	4.8	2.09
5	223.6	64.0	10.0	4.9	2.00
6	215.0	45.0	11.0	4.6	1.35
7	219.7	51.5	7.3	4.7	1.74
8	248.1	70.5	6.0	4.4	2.35
9	240.4	62.7	7.0	4.6	1.99
10	206.5	48.7	17.0	4.5	1.94
11	206.4	58.4	7.0	6.0	1.12
Average	219.7	58.0	10.7	4.8	1.74
(1st Test Ave.)	(201.2)	(54.1)	(14.8)	(5.1)	(1.76)

Detailed reports were forwarded to the entrants at three month intervals, and the final report was distributed to a large mailing list and was made available for publication in poultry journals.

The third Alberta Random Sample Test commenced on August 26, 1959. Twenty-eight applications were received for this test, and those selected were accepted on the same basis as the provious two Tests.

POULTRY SHOWS

The Toronto Royal Winter Fair was held again in November with entries of dressed poultry by producers and by commercial firms. Alberta entries made a very creditable showing, taking a higher percentage of "firsts" than any other province entered. Entries are pre-selected and only those of merit are forwarded. This dressed show is considered the show window of the industry and exhibiting there is of great value to Alberta producers as a whole, as Eastern Canada is our major market of surplus poultry.

ROYAL WINTER FAIR POULTRY PRODUCTS SHOW
(Alberta Awards)

	1956	1957	1958	1959
Championships	1	1	.....	.
Firsts	31	18	5	17
Seconds	7	15	12	3
Thirds	1	2	......	......
Total	40	36	17	20

The Alberta Provincial Poultry Show was held in Calgary in December, with increased public support.

BRANCH ACTIVITIES

The Poultry Commissioner attended annual meetings of the Canadian Produce Association (Western Division) and of the Canadian Hatchery Federation. The Poultry Commissioner and/or members of the Poultry Branch staff attended meetings of poultry producers, hatching egg shippers, turkey breeders, produce dealers, hatchery operators and committees dealing with various phases of the poultry industry.

Of the total number of chicken hatching egg and turkey hatching egg flocks, 100% were re-inspected during the year. Members of the staff made 372 service calls to poultry producers requesting assistance and attention. Fifty-five meetings and short courses, some of which were arranged by members of the Extension Branch, were addressed by Poultry Branch personnel. The Ninth Annual Short Course for hatchery operators, sponsored by the Poultry and Veterinary Services Branches, was held in Calgary for the first time. Interest in this meeting is keen as indicated by the large attendance of those engaged in this field. Attendance in Calgary was comparable to that of previous courses held in Edmonton.

One member of the Poultry Branch staff attended the training course in Farm Management at Olds, conducted by the Extension Branch. Information was relayed to other members of the poultry staff. It was our opinion that material obtained at this meeting was of considerable value to our staff in broadening its scope of thinking when considering poultry in overall farm enterprise.

A Hatchery Sanitation Control Testing program, on a restricted basis as a pilot project, was undertaken by the Poultry and Veterinary Services Branches. Results of the test series were satisfactory indicating that an extension of this program for 1960 to include all hatcheries wishing to co-operate is justified.

A series of meetings (fifteen) with egg grading station operators throughout the entire province was conducted jointly with the Canada Department of Agriculture, Poultry Division. The primary objective of these meetings was to improve the production of quality eggs. Attendance by operators and graders was large and suggests that this program should be continued. A guide on the costs of production of commercial eggs, chicken hatching eggs, chicken broilers and turkeys was prepared for information of district agriculturists in their contacts with poultry producers.

Recognizing the increasing numbers of poultry producers and importance of poultry in the farm enterprise in the northern area of the province, a Branch office with a permanent poultry inspector headquarters at Fairview was established.

A conference of members of the Poultry Branch and temporary fieldmen was held in September. Addresses were presented by Dr. A. R. Robblee, University of Alberta; T. J. Adam, and J. Raffa, Canada Department of Agriculture, Poultry Division; and the Poultry Commissioner.

Report of the Fur Farm Branch

R. W. GILLIES, Fur Farm Supervisor

General

The year 1958-59 proved to be a very satisfactory year for the fur farmer of Alberta. The mink pelts exported from the Province totalled 127,401 for a return of $2,225,025.00. Total livestock sales of mink and chinchilla added $51,300.00 in Provincial returns.

Thirty-three less Fur Farm Licenses were issued in this period, but larger operations by those remaining in the business have more than taken the place of those who ceased business.

Extension Work

(1) Field Days

Very successful and well attended field days and meetings were held at Calgary, Lac La Biche, and Calling Lake. Two field days planned for the Lesser Slave Lake area had to be cancelled at the last minute due to a distemper threat in the district. In lieu of field days, meetings were held at Canyon Creek-Widewater and Faust and were well attended and received. A steady improvement in attendance and interest has been noted at these annual events.

Mr. Arthur Prentice, General Manager of Canadian Fur Auction Sales, Montreal, acted as Field Day Judge and feature speaker at these events. John T. Caine of Edmonton assisted with the Judging. George Wilson, Provincial President of Association, participated in the program at the northern meetings and Lindsay French, Calgary, covered the southern meeting.

John White of Hudson Bay Raw Fur Sales Department, Montreal, and John Caine of Edmonton, judged the mink at Calling Lake.

The Veterinary Services Branch was represented by Dr. H. N. Vance at Calgary, Dr. J. G. O'Donoghue at Canyon Creek and Faust, Dr. G. S. Wilton at Calling Lake and the Veterinary Director, Dr. E. E. Ballantyne, attended and lectured at Lac La Biche. A variety of pertinent and timely subjects were covered by these speakers and a lively question period followed.

The Fur Farm Supervisor organized the program of field days and acted as chairman—he also presented colored film of pelting and skinning machines being used in Alberta.

The Alberta Chinchilla Breeders held a very successful Provincial Field Day at the Lacombe Experimental Farm Pavilion in September, 1959, but it was not quite as well attended as the year before.

(2) Office Extension Work

Ranch inspection and personal visits were extended by the Fur Farm Supervisor and advice and assistance rendered whenever possible. Requests for information on mink, nutria, chinchilla, rabbits, etc., were answered through the Branch Office. Pamphlets and bulletins are available on various fur farming subjects. A number of new, timely, departmental bulletins, were issued during the summer and fall.

(3) Fur Breeders' Association

The fur breeders' groups in all fur-farming centres continue very active. A series of special mink meetings were conducted in the month of February, 1959, at which time 17 display pelts were on exhibit to show pelting techniques, desirable quality, texture, and color. These meetings were under direction of Supervisor and John T. Caine, Vice President of Provincial Association.

Lindsay French of Calgary was elected to his second term of office as President of Canada Mink Breeders. Ken Montgomery of Edmonton along with Lindsay French, appeared, with a prepared brief before the U.S. Tariff Commission in Washington on June 23rd on behalf of the Canadian mink farmers. The final result of this hearing was delivered in September and the U.S. mink breeders were defeated in their effort to have embargos or quotas on mink pelts being imported into the United States.

As a result of a request from Alberta Fur Breeders' Association, regulations under Section 70 of General Game Regulations, requiring Import Permits for all live mink coming into the Province, was enforced in September this year. This regulation was enforced to try and stop or at least delay "Virus Enteritis" from being imported into this Province. This disease of mink has become rather widespread in other places and every effort is warranted to try and keep it from entering this Province.

The Chinchilla associations locally, provincially, and nationally, continue to be very active.

(4) Live Animal Show

The Alberta Provincial Fur Breeders' 22nd Annual Live Mink Show was held in the Edmonton Sales Pavilion on December 17th and 18th. Nineteen exhibitors entered 351 mink to make a very satisfactory and interesting show. Alberta was one of the few provinces able to conduct a Live Mink Show this year.

Mr. Lloyd W. Gibson, mink rancher of Delta, Colorado, was brought in to act as judge, and he complimented the exhibitors on the quality of mink on display at the Alberta show. Mr. Gibson has judged mink throughout the United States and has proved to be a very competent judge. He was assisted in the judging by Mr. John Ross of the Hudson Bay Raw Fur Sales Department, Edmonton.

The Alberta Chinchilla Breeders held their Alberta and Prairie Regional Show in the Calgary Auditorium on February 20th and 21st, 1959. This show was well organized and well attended. This was the Calgary groups first attempt at staging a chinchilla show and they are to be complimented on their fine effort.

Mr. E. E. Hughes of Idaho Falls, Idaho, and John Kokolsky of Edmonton acted as judges.

Health

General health of animals has been good. An increase of distemper cases was noted with a total of 16 cases being reported this season. Losses in a number of cases was rather heavy.

Virus Enteritis, a dread disease of mink, quite prevalent in some provinces, has not affected Alberta.

A more complete report on mink diseases will appear in the Veterinary Services Annual Report.

Feed

Local fish, particularly in the Lesser Slave Lake area has been fairly abunant. When local supplies of feed are available and the fur market remains stable, Alberta mink ranchers generally chalk up a successful season, which is the case this year.

Current Markets

The fur trade at the end of 1959 and the beginning of 1960 opened firm with keen competitive bidding the trend. Alberta and Canadian mink pelts reached the market well in advance of our American neighbors and this, seemingly, has been a distinct advantage. The great percentage of Alberta ranchers disposed of their pelts early and at profitable prices, so are now able to set up their ranch budget program for the next season.

Chinchilla pelts, while produced in limited numbers, are being used and accepted by the trade at reasonable prices.

The 13 licensed nutria ranches in Alberta are moving very cautiously.

Mura, a rodent developed in Germany and established at Scapa, Alberta, by the late John Schadeck, has ceased operation. The estate did not want to continue and disposed of animals on this ranch in April, 1959.

FUR FARM STATISTICS FOR THE YEAR ENDING AUGUST 31, 1958

NUMBER OF ANIMALS DECLARED ON FUR FARMS IN ALBERTA 1958-59

Kind of Animal	Total No. of Animals	Av. Value Per Animal Sept. 1958	Total Valuation
Mink Standard	30,379	20.00	$ 607,580.00
Mink Mutation	154,862	17.00	2,632,654.00
Chinchilla	3,690	15.00	55,350.00
Fox	94	10.00	940.00
*Nutria	62	5.00	310.00
Marten	2	15.00	30.00
*Mura	17,000	2.00	34,000.00
	206,089		$3,330,864.00

*Market price not established (estimated pelt value)

NUMBER OF ANIMALS PELTED ON FUR FARMS IN ALBERTA 1958-59

Kind fo Animal	Total No. of Animals	Av. Value Per Animal Fall, 1958	Total Valuation
Mink Standard	19,736	20.00	$ 394,720.00
Mink Mutation	107,665	17.00	1,830,305.00
Chinchilla	794	15.00	11,910.00
Fox	42	10.00	420.00
Nutria	nil	......	......
Marten	nil	......	......
Mura	350	2.00	700.00
	128,587		$2,238,055.00

NUMBER OF LIVE ANIMALS EXPORTED FROM ALBERTA 1958-59

Kind of Animal Kind of Animal	Total No. of Animals of Animals	Av. Value Per Animal Fall, 1957	Total Valuation Valuation
Mink Standard	99	100.00	$ 9,900.00
Mink Mutation	264	75.00	19,800.00
Chinchilla	216	100.00	21,600.00
	579		$ 51,300.00

NUMBER OF ANIMALS RETAINED FOR BREEDING STOCK IN ALBERTA 1958-59

Kind of Animal	Total No. of Animals	Av. Value Per Animal Dec. 31/58	Total Valuation
Mink, Standard	10,544	$20.00	$ 210,880.00
Mink, Mutation	46,933	17.00	797,861.00
Chinchilla	2,680	15.00	40,200.00
Nutria	62	5.00	310.00
Foxes	52	10.00	520.00
Marten	2	15.00	30.00
Mura (discontinued)			
	60,273		$1,049,801.00

FUR FARM LICENSES 1958-59 SEASON

Mink	316	Fox	2
Chinchilla	93	A. Oeming's zoo consisting of Wolverine, Lynx, Fisher, Fox, Bob Cats	1
Nutria	13	Mura	1
Mink and Marten	1		
Mink and Fox	4		
Mink and Chinchilla	1		
Chinchilla and Nutria	1		433

Report of the Water Resources Branch

F. L. GRINDLEY, B.A., B.Sc., P. Eng., Director of Water Resources
R. E. Bailey, B.Sc., P. Eng., Chief Engineer
J. L. Reid, B.Sc., P. Eng., Supervisor, Hydroelectric Development
J. Mould, M.Sc., P. Eng., Supervisor of Irrigation and Drainage
A. G. Underhill, B.Sc., P. Eng., District Engineer, Calgary
R. J. Knight, B.Sc., P. Eng., District Engineer, Lethbridge
R. L. Francis, B.Sc., P. Eng., Construction Engineer, S.M.R.D., B.R.D.
E. T Dean, A.I.M.M.E., Construction Engineer, Edmonton

Hydraulic Engineers:
W. Solodzuk, B.Sc., P.Eng.
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A. E. Murray, M.E.I.C., Office Engineer
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Introduction

In 1959 the prairies had a particularly dry spring. Virtually no runoff occurred in the eastern areas of the province. The mountain snow cover at the end of the winter was ten per cent above the long term normal but due to a spring which saw warm days and cool nights, the runoff was very orderly. This condition caused serious water shortages in some instances. In the Special Areas section of the province reservoirs received little or no fresh water. Inhabitants had to ultilize what little water remained from the previous year.

Flood problems were generally non-existent with the exception of Bearberry Creek at Sundre. A prolonged heavy rain in the foothills, west of Sundre, caused the creek to reach flood stage, however, the creek channel improvements undertaken by Water Resources in 1956 were effective in confining damage to the channel and prevented flooding of the town of Sundre.

Runoff in the northern portion of the province was mild to the point that even those areas which are habitually a spring flooding problem did not present any difficulties.

This general dry condition persisted throughout the year with the exception of the month of August during which a large percentage of the year's precipitation occurred. Total precipation for the year was close to or slightly below the long term average. The following table is a comparison between the precipitation at six Alberta stations for the 1958-59 season and the long time mean precipitation at each of these stations:

	Precipitation during 1958-59 (inches)			Mean Precipitation (inches)		
City	October-March	April-Sept.	Total	October-March	April-Sept.	Total
Lethbridge	5.5	12.4	17.9	5.67	11.07	16.74
Edmonton	3.5	14.2	16.7	5.20	12.43	17.63
Grande Prairie	7.6	7.0	14.6	7.02	9.78	16.80
Peace River	2.4	7.3	10.7	4.56	8.59	13.15
Fairview	3.5	10.8	14.3	7.49	10.43	17.92
Ft. Vermilion	5.4	6.9	12.3	4.32	8.44	12.76

As a result of these conditions, irrigation was extensively used in the southern portion of the province, particularly on the newer projects where the amount of water used exceeded that of any previous year. In the northern area lack of adequate moisture at the right time required special measures to insure supply of domestic water for some towns and communities.

As in 1958, the Water Resources Branch again carried out an extensive program of work during the 1959 season.

The work generally consisted of a continuation of construction on flood control and drainage works in the Peace River area, flood control work on the Pembina River, investigations of upstream headwater storage on the South Saskatchewan River Basin and the construction of drainage and seepage remedial works on the St. Mary and Milk Rivers Development and the Bow River Development irrigation projects. The program of conducting inspections of farm and municipal drainage problems was continued. Further work was done on hydrology and hydrometric studies and lake bed contours were determined on a few additional provincial waters.

The field survey work during the year consisted primarily of the following approximate quantities:

Levels	1170 miles
Transit Work	800 miles
Canal cross-sections	64 miles

The above includes the establishing of horizontal and vertical control for aerial photography mapping over an area of some 525 square miles. In addition, surveys and the plotting of topography contours was carried out over an area of some 29,570 acres.

In co-operation with this Branch, the Technical Division of the Department of Lands and Forests has prepared maps with ten foot contour intervals over an area in excess of 75,000 acres for use on various projects. Aerial photography was obtained by a contract with Photographic Surveys Corporation over an area of approximately 225 square miles to be used in studies of the William Pearce Project. A reach of the Red Deer River near Drumheller was also photographed to facilitate river training, flood control and rural subdivision studies.

Irrigation Planning Board

In October a Provincial Government Planning Board was initiated to study and advise the government as to the development of new irigation projects and procedures to be followed in the extension or reconstruction of formerly established irrigation districts. In making these studies and recommendations the Board will acquire and give consideration to information on soil, topography, water supplies, engineering feasibility, agricultural and economic potentialities. The establishment of the Board was recommended in the 1958 report of the government appointed Irrigation Study Committee. Members of the Board are as follows: S. S. Graham, Director of Extension Service, Department of Agriculture; Professor William MacKenzie, Political Economy Department, University of Alberta; C. J. McAndrews, Colonization Manager, St. Mary and Milk Rivers Development and Bow River Development; J. Mould, Supervisors of Irrigation and Drainage, Water Resources Branch; S. L. Blair, Farmer, Picture Butte, and W. E. Bowser, Senior Pedologist, Canada Department of Agriculture.

Prairie Provinces Water Board

Two meetings of the Prairie Provinces Water Board were held in 1959. The first meeting was in Regina on June and the second in Winnipeg on December 2 and 3. At both meetings the Alberta member pressed for some recognition of the preferential use of water for domestic, industrial, municipal and irrigation purposes. A resolution was passed at the December meeting which recommended to the Governments concerned that water power regulations be amended so that each hydro plant license is made subject to stream flow depletions which ultimately may result from previous allocations made by the Board and ratified by Orders-in-Council.

The problems now faced by the Board can best be summarized by quoting Minute 19-15 of the meeting on December third:

> "Mr. Clark pointed out that the imminent construction of power plants capable of using all the flow of the South Saskatchewan River for generating electrical power, posed a question — namely, 'If provincial licensing of power plants will confer rights in all waters not already allocated by the Board, what procedures should the Board use in considering requests for new allocations for consumptive uses upstream?' "

After the Secretary reviewed past Board discussions on this subject, many views were expressed by the Board members, which may be summarized in the following questions:

1. Does the operation of a power plant using all the flow of a river preclude all future upstream development? If it does, then the Board should recognize the implications of each power plant recording. If not, then the Board should have some form of allocation for power to protect the output from new upstream depletions.
2. Within each province each water resources administration must abide by its Water Legislation. Therefore, any procedures adopted by the Board should be directly related to provincial water laws.
3. As applications are received for new allocations for upstream consumptive use, will it be necessary for the applicants to consider compensation to established hydroplants?
4. If compensation is necessary, what part should the Board, the provincial administration, and the actual water users play in working out compensation?
5. Will consumptive use in the foreseeable future exceed that amount already allocated by the Board?
6. What orders of priority (in time) and precedence (of use) prevail interprovincially, if any?

The Board felt that these problems must be solved without delay, and members pointed out that the remaining flow would be utilized for power production and the growth of small projects would be continuous.

The need for a River Basin plan was recognized by the Board and a reconnaissance of interim Basin study is under way.

Peace River Power Development

The latest report we have on this proposal is that a group of experts, appointed by the Water Comptroller for British Columbia, will examine in detail all matters pertaining to the engineering and economics of the huge development. If this group decides that the dam represents sound engineering and economics it would still have to receive approval from the Government of British Columbia with respect to the best plan of energy development in relation to alternative plans.

The actual site of the first dam to be built is about eleven miles from Hudson Hope and is known as the Portage Mountain site. This dam will be a rock and earth fill structure with a crest of 600 feet higher than the present river level. A secondary dam is proposed below the Portage Mountain site and this damsite is located four miles west of Hudson Hope at the mouth of the Peace River Canyon.

The storage capacity of the main reservoir will be 88 million acre feet of water. The total discharge of the Peace River at Hudson Hope for 1954-55 (October to September inclusive) was 28,070,000 acre feet. During the period the reservoir is filling Alberta would expect to receive a minimum flow at the Alberta border of at least 6,000 c.f.s. The general effect of the dam in controlling spring floods and augmenting low flow is regarded as beneficial to Alberta.

Because of the cost of the proposal of over 600 million dollars, the length of the transmission line to Vancouver (600 miles) and the imminence of reaching an agreement between Canada and the U.S.A. on the Columbia developments, it is reasonable to suppose that some time will elapse before construction is actually started. It will be necessary for Alberta and British Columbia to have some form of agreement regarding operation of the completed dam or dams in British Columbia with special reference to flow in the Peace River below the dams. This will also involve the Navigable Water Protection Act of the Dominion Government. The governments of Alberta and British Columbia have established close liaison in connection with all discussions relating to the project.

Special Areas Projects

In the spring of 1959 there was little or no runoff in the Hanna-Youngstown area. An estimated 95% of the reservoirs constructed by the P.F.R.A. and Ducks Unlimited were either dry or drawn down to a dangerously low level resulting in a serious stock and irrigation water shortage.

The P.F.R.A., under a federal-provincial agreement, requested that the province take over and maintain all projects in the Special Areas that were considered completed. As a result of this request, inspections were made on ten of these projects and recommendations were submitted for consideration before acceptance.

In line with our policy of former years, the Water Resources Branch again entered into agreement with Ducks Unlimited on a fifty-fifty basis for the cost of several small stock-watering dams and reservoirs. A total of twelve of these projects were inspected and accepted. Further to this, about thirty Ducks Unlimited proposals for the future were investigated. Plans of these projects have been submitted by Ducks Unlimited to the Special Areas Board for consideration by their Advisory Committee.

Water Supply

The supply of water for irrigation and water power development was entirely adequate during 1959 with the exception of those irrigation projects which rely on the storage of runoff water. Below normal to negligible runoff caused severe water shortages for stock, irrigation and domestic supply in some areas. The depletion of the reservoir for the Town of Hanna necessitated drawing all available live storage from Fox Lake. This was adequate to meet this year's demands but leaves no reserve for next year should there be insufficient runoff.

A serious domestic water supply shortage occurred in the McLennan-Girouxville area of northern Alberta and it became necessary for the Department to provide some assistance with pumps in order to insure an adequate supply of water in the town reservoir to meet winter requirements. Some assistance was also provided to a large group of landowners near Peace River town whose stock watering reservoirs required replenishment for the fall and winter months.

River Regime

Observations on the Red Deer River at Sundre are continuing. The erratic practice of this river of jumping from one channel to another or washing out new channels gives cause for some concern over the safety and protection of the main highway and the main highway bridge. A well established sawmill located near the edge of the river's flood plain is also in a precarious position. Should the river jump out of this confined area during a heavy flood stage, a problem of some consequence would result.

Office Administration

Small water Development: For the past few years the number of applications for water rights in connection with small water development has remained fairly constant. During 1959 we received 325. Some 300 of these have related to projects within the area in which P.F.R.A. assistance is given. Federal government field staff make the necessary inspections and surveys and the hardpaper plans are sent in to the Water Resources Office for tracing. At times the Department has the assistance of a P.F.R.A. draftsman, and one has recently been allocated to this office.

Water Supplies to Towns and Villages: Due to the overall increase in both urban and rural populations we find a strong demand for an increase in quantity, as well as quality, of potable water. Underground sources are proving inadequate in many cases. During the past year eight applicaitons have been received. There were submitted by Consort, Dobson, Milo, Monarch, Swan Hills, Townsite, Viking and Westlock.

As a rule the local authority engages the services of consulting engineers who are co-operating well with the Department as to procedure. A reciprocal service is given by the Department in supplying hydrometric data, where gauged streams are concerned, and by a considered opinion on expected runoff based on our knowledge of a specific area, where such data is not available. All plans are submitted to the Department and are inspected and approved by the Chief Engineer.

Interim Licenses: Following the filing and approval of plans filed in connection with all water right applications, an interim license is issued to the applicants. During 1959, 186 such licenses were issued as well as a number of Final Licenses.

Peace River Water Supply Program: The District Agriculturists receive all applications for assistance in the construction of dugouts in the Peace River area and upon completion of them they make an inspection and determine the final dimensions of the excavations. The certificates for payment are then submitted to the Water Resources Office and the yardage calculations made to determine the amount of compensation due each applicant. This compensation is paid at the rate of six cents per cubic yard with a maximum payable amount of $120. One hundred and fifty-four dugouts were completed during 1959 and approximately $17,000 in compensation paid to the farmers concerned.

Water Power and Upstream Storage: Currently the most important project of this kind is the Calgary Power Project on the Brazeau River in Section 18-46-11-W.5M. This project will be considered elsewhere in this report.

Right-of-way Plans: The acquisition of lands for canal right-of-way in connection with the major projects continues steadily. The surveys for the St. Mary and Milk Rivers Development are now the responsibility of Mr. Dalton A. Martin, A. & D.L.S. The surveys for the Bow River Development are being carried out by the firm of H. W. Brown and Company, Surveyors, Lethbridge.

Tracings in triplicate are submitted to the Water Resources Office for checking against project plans. The survey is also transferred to a key plan. The original tracings are then submitted to the Director of Surveys for checking and approval. Following this, the plans receive the final approval of the Water Resources Office and the signature of the Minister is applied for expropriation purposes. These plans then become registered in the District Land Titles Office and copies are filed with the Department and the Manager of the particular irrigation district. During the past year forty-eight sets of these plans have been processed, twenty-three being in connection with the St. Mary and Milk Rivers Development and twenty-five in the Bow River Development.

Water Agreements: All agreements for the supply of water are filed in the Water Resources Office, as are transfers, surrenders and cancellations of such agreements. The St. Mary and Milk Rivers Development, the Bow River Development and the Eastern Irrigation District are the three districts principally concerned and during the past year three hundred and forty-six agreements were processed.

General: There has been the normal number of personal interviews held in the office with complainants, prospective licenses et cetera. Due to the year's runoff being singularly light, there was a marked reduction in the number of drainage and flooding complaints.

It would be remiss to omit comment on the cordial spirit of co-operation between this office and the many other branches of government with which we have contact. This is one of the intangibles which has been built up through many years of association, the lubricant of goodwill which enables the machinery of administration to function smoothly and efficiently.

General Inspection Services

Throughout the year some 300 inspections were made of small water complaints and problems affecting farmers and municipalities. About 67 miles of levels and 10 miles of transit survey was required to obtain data on these inspections. The number of inspections attended this year was about 12% less than that of last year and about 33% less than the number attended in 1957. This decline may be attributed to the relative dryness of the past two seasons together with the 1957 amendment to the Municipal Districts Act which provided for such problems to be first considered by the local municipal authority before being referred to the Water Resources Office. This results in many problems being solved at the local level without requiring participation by this office.

Financial Assistance Policy

Since January 1, 1959 financial assistance agreements were made with three drainage districts, four municipalities and one agreement was culminated with the City of Calgary. These agreements represent a government financial contribution of $64,000.

The contribution to the drainage districts was for assistance in improving or extending the existing system of ditches. Assistance was given the municipalities in conjunction with the construction of drainage and flood control works deemed to be of public benefit. The City of Calgary received assistance toward river channel improvements and dyking on the Bow and Elbow Rivers to alleviate flooding.

One of the larger projects carried out under this policy is the Peavine Creek Drainage and Flood Control Project located south of the towns of Donnelly and Falher. It is a project that has been under discussion since the 1920's. Investigations were conducted last winter and the project found to be of direct benefit to a large area of farmland and municipal roads. A fifty-fifty financial agreement was therefore made with the Municipal District of Smoky River and construction of the works, which began in September, are presently 70% complete. These works include three miles of new and improved creek channel with seven concrete and cement-sandbag drop structures. The lower completed portion of the scheme should prove effective in draining farmland during the spring of 1960. The remaining work will be undertaken immediately after spring runoff. The engineering services and supervision of construction was provided by the Water Resources Office.

A request was received from the fishermen of the Joussard-Faust areas located on Lesser Slave Lake for assistance in the construction of canals which would facilitate the docking of fishing boats. Because the level of Lesser Slave Lake this year was about two and one-half feet below its average elevation since 1956, a long reach of very shallow water extended from the shoreline of the lake. This made it necessary for fishermen to transfer their goods to smaller boats to convey them to shore or else wade through the water carrying their goods on their backs. On the basis of a fifty-fifty financial agreement with the government, a dragline was engaged to construct a channel from this shoreline out into the lake through this shallow area. Early in the fall the federal government extended the channel an additional 200 or 300 feet. The permanency of this work is questionable, however, it has apparently, so far, served its purpose.

A second channel was to be constructed near the Town of Faust, however, some difficulty was encountered in obtaining a satisfactory location and no work was attempted under the Water Resources direction.

SPECIAL INVESTIGATIONS

During the past year a number of small drainage proposals were surveyed for the purpose of evaluating the cost of construction as compared to the value of benefits that could be derived from such schemes. A total of forty miles of levels and ten miles of transit work was carried out in the determination of this information. The following are the most noteworthy of these projects:

1. Le Blanc (Beaumont) Ditch

Investigation of this problem disclosed that although a ditch existed it was inadequate and therefore ineffective. A survey was conducted and a design and cost estimate were made in co-operation with Mr. Watson of Stewart, Weir and Stewart, Surveyor Consultants. At present the Municipal District of Leduc is studying the proposal.

2. Charlotte Lake

A survey was conducted during the summer of 1959 to determine the feasibility of draining Charlotte Lake. This would be accomplished by deepening the outlet which, in this case, is Muriel Creek. Thereafter a design was made of the proposed scheme. Due to the extremely low gradient of Muriel Creek, it was found that no drop structures would be required. On the other hand, however, the earth work amounted to the substantial sum of approximately $25,000 at thirty cents per yard of excavation. Added to this would be the cost of several bridges or crossings which would have to be replaced.

3. Flint Lake

This investigation began with a petition from a group of farmers surrounding Flint Lake. An inspection disclosed that the outlet is, in fact, a mass of floating vegetation. This material allows only a small amount of water to escape, thus a flooding problem exists. The initial operation in the drainage of this lake would be to blast a ditch through the soft vegetable material. Once this part of the operation is completed, the trimming of the blasted ditch and construciton of meander cutting ditches can be completed. The proposal is presently being studied by the County of Wetaskiwin.

4. Little Burnt River

The Little Burnt River, flowing southward to the Peace River just east of the Town of Bluesky, has been a perennial problem during a heavy runoff season for at least thirty years, as the spill from the over-taxed channel floods eastward over farmlands. During the winter of 1959 the Municipal District of Fairview, under the direction of a Water Resources Engineer, cleared the river banks and bed of a vast amount of brush in the area of flooding. This scheme was financed through the Federal Winter Works Program. An additional survey by this Branch will guide the Municipal District in a proper re-aligning and meander cutting program next year. These two measures are expected to eliminate the present flooding problem.

5. Woodbend Drainage Scheme

The Woodbend township has been a drainage problem for years but during that time most of the land was Crown and so very little was done. However, with the purchase of this land for grazing the situation has now changed. The township is predominately a series of sand hills and sloughs. During the summer Water Resources was approached about drainage of some of these sloughs to provide for a road which could be built on a contingency grant. A survey involving approximately eight miles of levels was made in sections 12 and 14 to determine the feasibility and cost of such a project. It was found that the project was possible and the cost would be approximately $1,000. This figure only applies to the cost of draining the road allowance. It was felt that the individual farmer was responsible for draining his own land. The construction of such a ditch would come under the Department's financial assistance policy if the municipality of Stony Plain accepts the responsibility of maintaining it.

6. **Whitford Lake**

This project was reported in 1957 after a survey had been completed by Water Resources. The lake is partly in the M.D. of Eagle and partly in the M.D. of Lamont. Negotiations between them began in 1958 concerning the sharing of the cost of construction. An agreement was reached in 1959 and construction began with the improvement of the Limestone Creek in section 19, some eight miles downstream from the lake. The farmer on the northwest quarter of section 19 had always been plagued with flooding so a large cutoff was made, thus removing many of the long meanders. A new precast bridge was built over the new channel. The lake level was dropped approximately two feet which removed much of the patented land and district roads from inundation. The total cost of the project was estimated at $23,000. Fifty per cent of this amount will be paid by the Department under the financial assistance policy. Observation of the project will be made during the spring runoff in 1960.

7. **Hines Creek Project**

In 1956 the Town of Hines Creek was contemplating the installation of a domestic water supply. In addition, this town suffers from flooding and inadequate drainage arising from the flood waters of Jack Creek. A request was made to the Water Resources Office to investigate the feasibility of constructing works which would serve the dual purpose of flood control and water supply. Preliminary investigations were carried out by Water Resources engineers and by a private consulting firm engaged by the town. At that time the government did not see fit to embark on this project and consequently the town installed a domestic water supply independent of the proposed drainage scheme. Nothing further developed in this regard until this year when a further request was received for continued investigations into the solution of the flooding problem. Additional surveys were therefore conducted and the matter will be given further study in the near future.

8. **Vixen Creek**

In 1952 complaints were received concerning the flooding of property from the waters of Vixen Creek located north of Wanham. Investigations were carried out and recommendations made at the time, however, due to difficulties in obtaining the necessary right-of-way, local residents have been unsuccessful in their efforts to construct remedial measures. The matter was again brought to the attention of the Department in 1957. Investigations have since been made from time to time until this year a proposal was made for the formation of a drainage district. This advisability of forming such a district is perhaps questionable in view of the overall picture of the problem. The matter is therefore presently being held in abeyance pending the possibility of legislation which would make provision for the Water Resources Branch to enter into agreement with the Department of Municipal Affairs for works of this nature to be constructed on a fifty-fifty financial basis.

DRAINAGE DISTRICTS

Big Hay Lake

In the 1958 report the formation of a new district known as Big Hay Lake was reported. This district was kept under observation during the summer of 1959 and it was noted that the lake dropped in elevation to a point where local farmers are now wanting to buy land that was completely inundated prior to the formation of the District. Under Section 12 of The Drainage Districts Act, public lands within its boundaries may be purchased from the Provincial Government by the Board of Trustees and offered for sale by public auction in such a manner and subject to such conditions and regulations as the Minister decrees. In essence, the Water Resources Branch would investigate the land in question and would submit its recommendation to the Minister.

The outlet of Big Hay Lake is in Bittern Lake which has the distinction of having no outlet. Periodic lake levels have been taken throughout the years and the lake has dropped a total of eleven feet since 1915. A check on the lake in 1959 showed an additional drop of 0.1 feet as compared to 0.9 in 1958. From this it must be assumed that the Big Hay Lake drainage system is not at present a threat to the level of the lake.

Bearhills Lake

The Bearhills Drainage District applied for assistance from this office in 1958 and proceeded to deepen the outlet ditch from the lake. It was noted this year that the deepening of the ditch resulted in a 2.0 foot drop in lake elevation over 1958. This drop brought requests to this office concerning the sale of public lands once more. These lands are now under consideration, as in the case of Big Hay Lake.

The following table gives the pertinent details of each district. Not shown in the table are the benefits to many miles of district roads.

Drainage District	Date of Formation	Total area in acres	Acres Directly Benefitted
Holden	April 15, 1918	50,560	12,430
Dickson	April 22, 1919	15,360	2,880
Daysland	June 19, 1919	74,720	15,000
Hay Lakes	February 17, 1922	9,600	2,390
Cygnet	August 18, 1948	4,200	4,000
Manawan	November 19, 1948	16,800	3,841
Cameron	July 29, 1949	2,600	916
Bearhills	April 20, 1954	4,000	1,190
Big Hay Lake	July 15, 1956	11,360	3,000
	Totals	189,200	45,647

Under the government financial assistance policy, financial aid was once more extended to the Daysland, Holden and Dickson Drainage Districts for their continued program of ditch maintenance.

GROUND WATER

General

The ground water picture for 1959 remained relatively unchanged from last year. Precipitation was as much as two inches below the long term average over parts of the province, particularly in the Peace River area. Generally cloudy damp weather prevailed during most of the last six months of the year keeping evaporation losses to a minimum, thus lake and ground water levels were not reduced as greatly as they might have been.

Inspections

Approximately one hundred and sixty field trips were undertaken for the purpose of contacting water well drillers, taking lake levels and investigating complaints. The most notable complaint arose from the Taber area where once again, flowing wells from the Milk River sandstone are being criticized. In the fall of 1956 much concern was indicated with regard to the continual decline of pressure in the flowing wells near Etzikom. In the fall the complaint involved contamination of soil due to waste water from flowing wells near Taber. Investigations indicated four major problems with regard to over 200 flowing wells in the Milk River sandstone of southern Alberta. These are:

(a) wastage of ground water with a risk of depleting the storage supply,
(b) disposal problems with respect to surplus overflow,
(c) contamination of agricultural land due to alkali conditions created by the overflow,
(d) the wastage and hazardous conditions presented by the presence of natural gas.

The implications connected with control measures are being considered and appear to present a very complex problem. The major complications are in the matter of financing, the placing of responsibility and economics.

Water Well Drillers

The registration of well drillers has increased to 185 from 161 last year. This increase seems to be due mostly to a general slow-down in seismography activities which has resulted in many idle rigs turning to water well drilling. Reports submitted by well drillers are down slightly from 1,100 last year to 1,050 for 1959. It is our observation, as a result of many contracts, that most drillers consider it wise to respect the law with regard to obtaining a permit, however, the matter of submitting a log for each well seems to be regarded by many as an unfair demand.

Lake Levels and Precipitation

Precipitation being slightly below average in 1959 is reflected in a moderate decline in the level of some lakes while others seem to have held their level. Lesser Slave Lake shows the largest decline of about two and one-half feet. The following is a list showing a comparison of median levels for a few of the major lakes during the past four years:

	1956	1957	1958	1959
Gull	92.79	92.50	92.03	91.24
Sylvan	78.89	78.43	78.17	77.50
Cooking	97.99	97.54	97.00	96.63
Buffalo	87.60	87.26	86.16	85.54
Wabamun	72.35	71.79	71.20	71.10
Pigeon	100.88	100.80	100.48	100.00
Lac Ste. Anne	98.03	97.49	97.07	97.26
Lac La Biche	99.19	96.43	96.18	97.03
Lesser Slave	93.52	93.15	93.10	90.68

PROJECTS

Moonshine Lake

A small lake exists near the settlement of Blueberry Mountain located north and west of Spirit River. This lake is sloughy in nature but local residents thought that with improvement it could be converted into a suitable location for recreational facilities. The Parks Board, of the Department of Lands and Forests, consequently undertook the development of this area. A request was made to the Water Resources Office to design and construct an earth fill dam across the outlet of the lake. This was undertaken and the Parks Board paid for the cost of construction. In addition, an inlet canal of about a mile and a half long was built to insure that water from an adequate drainage area would be conducted into the lake. The reservoir formed by the dam will more than double the size of the present lake.

Bow River Ice Trap

The habitual problem of ice on the Bow River at Calgary remains a matter of concern. On the recommendation of the Bow River Ice Committee a contract was let this year for an excavation of approximately 600 feet long, 250 feet wide and 20 feet deep in the Bow River immediately below the Louise Bridge to create an ice anchorage. This contract has not been entirely completed but in early November an ice bridge did form and considerable anchorage was created. This eroded out due to a spell of warm weather but formed again later on in the winter. Indications are that the excavation is fulfilling the intended function. Engineering for this project was supplied by Calgary Power, while Water Resources was responsible for the arranging of a construction contract and the cost of building the works.

Heart River Project

As stated in the 1958 report, the runoff in the spring of that year caused extensive damage to the works of the McLennan-Girouxville canal. These works were rebuilt during the summer of 1958. The runoff in the spring of 1959 was mild, however, it was sufficient to prime and test the newly re-constructed works.

Because of the extremely poor nature of the soil for construction purposes, some seepage was again experienced under and around the wing-walls of nine of the twelve timber drop structures. To insure protection against further washout, Water Resources undertook, with its own forces, to reinforce the structures by installing polyethylene canal liner for twenty feet immediately upstream of the structures and sealing this liner to the structure itself. This will eliminate any possibility of seepage. The liner was then covered with approximately twelve to eighteen inches of compacted dirt backfill. The backfill adjacent to the structures was "puddled" into place to insure maximum densities and the best possible bond with the structure. There is nothing left that can be done to insure the permanency of these works. Should there be any further failures, no alternative remains but to replace the structures with concrete instead of timber.

Some eighteen miles of waste banks along the McLennan-Girouxville canal were levelled and graded. One mile of this levelling will require further attention in the spring. This work will allow the municipality to seed these banks to grass and so afford a measure of weed control. If operation of the works proves to be satisfactory in the spring of 1960, this part of the Heart River Project will be transferred to the municipality which will assume all future operational and maintenance responsibilities.

The Winagami-Kimiwan canal was found to have suffered from considerable silting and sloughing of the banks. This was primarily caused by the canal being located through a swampy area of country which resulted in material in the banks of the canal to be perpetually saturated and in a consequent unstable condition. Steps were taken to remedy the situation and to put the canal into satisfactory condition. The waste banks were moved to the outer extremities of the right-of-way and the pipe inlets were installed through the dyke to facilitate full surface and sub-surface drainage of the adjacent ground. In addition, the cleaning and further excavation of the canal was carried out during which the side slopes were flattened from 1:1 to 2:1. Protection against erosion at the drainage inlets was provided by means of sandbags filled with concrete and by the use of preformed concrete blocks.

Last year it was reported that a new design was being prepared for outlet works from Lake Winagami. This structure has now been built. It is made entirely of reinforced concrete and incorporates automatic radial gates which are designed to maintain a relatively constant water level on lake Winagami. This feature will insure a readily available supply of domestic water for the towns and area lying to the west at any time when such is needed, as well as being beneficial to the recreational facilities provided by the Winagami Provincial Park located on the east shore of the lake. The old structure has been removed and replaced with a sixty foot span timber bridge across the lake outlet canal.

This year, owing to the very mild spring runoff and small amounts of precipitation during the summer, Lake Winagami receded to an elevation less than has been experienced in at least the past ten years. This made the economic supply of water to the towns of McLennan, Donnelly, Falher and Girouxville impossible from this source. Tests were therefore made on the waters of Lake Kimiwan at McLennan as to its suitability for domestic use. Upon receipt of favourable reports from the Department of Health and with the knowledge and consent of the town councils concerned, water was pumped from this lake in order that the town reservoirs could be replenished to meet the winter demands. This operation required the pumping of some 30 million gallons of water.

The existing water conditions during 1958 and 1959 illustrate two extremely opposite conditions which might normally be expected to occur with an intervening period of about twenty years. In 1958 the runoff was of a magnitude very infrequently exceeded, while in 1959 water shortages predominated. This proximity of two extremes very effectively illustrated the need for more rigid control of the waters of the Heart River Project.

In addition to the construction of the new outlet control works for Lake Winagami, work was also begun on a second dam on the Heart River. This structure will be located adjacent to the original dam completed in 1951. It will make available considerably more storage for spring flood waters as well as provide a much needed measure of control on the amount of water flowing into Lake Winagami. Although the purpose of this dam is primarily associated with its beneficial effects on the flooding problem in the High Prairie-Grouard area, its function of helping to insure an adequate supply of domestic water at all times for the McLennan-Girouxville area will receive a good share of public appreciation.

Pembina River Flood Control Project

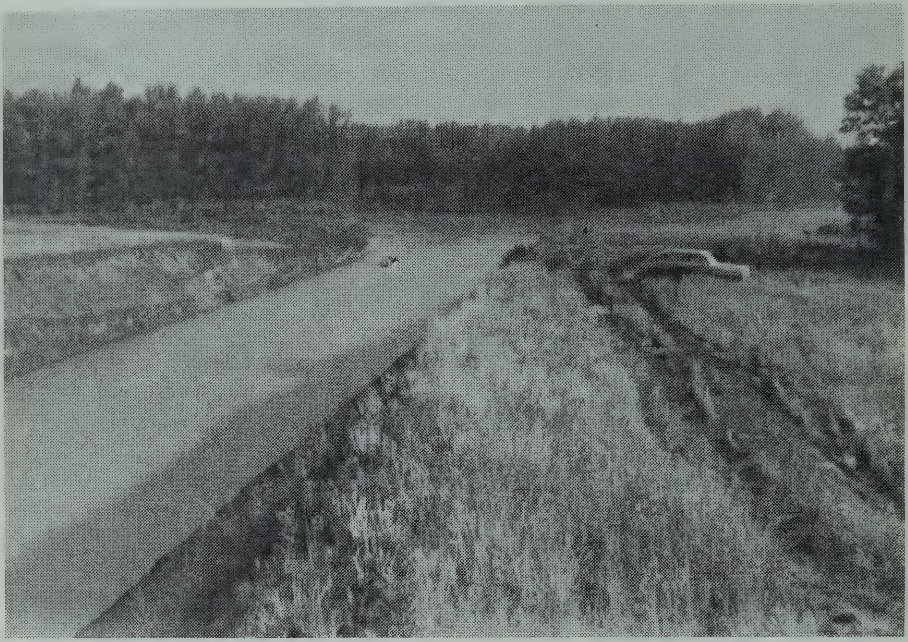
The Pembina River Flood Control Project is designed to prevent the river from spilling into its natural flood plain. The engineering action employed is known as "river training" which primarily involves a co-ordinated system of eliminating exaggerated meander loops by means of "cutoff". By this method of flood control, the spill waters of the Pembina River will be confined within its banks thereby relieving the residents in the flood plain from the severe floods which they have experienced in the past. The major zone of complaint is between Manola and Jarvie in the Westlock area. This year is the third consecutive year that work has been conducted on the project. Readers who are interested in knowing previous details are referred to the Annual Reports of 1957 and 1958.

Work on the project during 1959, as in the previous years, was divided into three separate categories. The first being survey, second—construction and thirdly—observation. During 1959 the survey phase of the project was completed. All the cutoffs are now investigated and completely surveyed. One additional cutoff was constructed during 1959 bringing the total number in existence to four. Construction of this cutoff was a carryover contract from the previous year and was recorded in the Annual Report of 1958. Observing the development of constructed cutoffs is an important phase of the project and additional data was obtained in this regard.

The season was hampered by inclement weather which resulted in unfavorable working conditions. During the months of June and August, in particular, above normal precipitation prevailed, however, the work slated for the year was successfully completed. The camp which was established in 1958 was used to accommodate the survey crews. Two survey crews plus a boat crew were employed to accomplish the work. One was assigned to complete the survey of the cutoffs and the other to construction and the obtaining of data from the cutoffs already constructed. The boat crew was responsible for measuring discharges and river bed movement. The operation of the survey boat is dependent on the river level and this crew was transferred to reservoir and lake survey when the river was at low stage.

The Pembina River, as all other mountain rivers, has two peak flows during the spring months. One occurs during April when the general snow-melt occurs and the other during the latter part of June when the mountain snow melt occurs. During this latter peak flow, constant observation of discharge, water levels and bed movement are kept to record the development of the cutoffs. Again, as in 1958, the peak flows were too low to test the full effectiveness of the cutoffs, however, the continuation of dropping river levels and the sedimentation of old river meanders are encouraging signs of their success.

Future construction on the Pembina River Project will depend upon the effects of development of the hydroelectric project on the Brazeau River. The Brazeau and Pembina Rivers originate in close proximity to each other and preliminary plans provide for the diversion of part of the flow from the Pembina River into the reservoir site on the Brazeau River. With the advent of this hydroelectric project and accompanying plans for diversion, a study to determine the affect fo this project on flood flows in the Pembina River within the zone of complaint will have to be conducted. Meanwhile, observations and measurement of the development of the cutoffs constructed so far will continue.



Pembina River cutoff "C" near Dapp—This cutoff channel is 1,100 feet long with a 50 foot bed width and a maximum cut of 36 feet. It cuts off 2.3 miles of river meander channel.

Kleskun Hill Project

The spring runoff from the Kleskun Hill was relatively mild. In spite of this, however, damage was once again experienced on the two miles of flume that runs on the north side of and parallel to the main highway. The cause of this damage may be attributed to the improper installation and non-completion of the works by the contractor, and failure on the part of the Contractor to adequately protect the uncompleted portions of the project from spring runoff waters. This directly resulted in runoff water from the adjacent fields getting under the floor of the flume. The heavy silt content of this water completely sealed the filter bed under the flume and rendered off-take drains non-operative.

Investigations resulted in the Department's decision to remove the Contractor from the project and to repair, rebuild and complete the works with departmental forces. The hold-back monies on the contract were retained by the Department to defray costs of reconstruction and the bonding company was advised of its possible implication. Various inspections were subsequently made by consultants, both on behalf of the Department and the bonding company, but no final word has been received from the bonding company.

Realizing that delays could not be tolerated if the project was to reach completion by the end of the year, work began on the mile of metal flume about the first of June. Portions of this flume were relaid and others realigned. Some minor changes in design were made. A dyke was constructed on the north side of the flume containing inlets at designated intervals to allow runoff water from the fields to enter the flume under control. The ditch leading to the headworks of the metal flume has been completed, together with the pertinent six precast concrete drop structures and cement sandbag rip-rap. The area between the flume and the main highway has been graded and seeded with grass and fall rye.

The second mile of flume consisted originally of three thousand feet of treated plywood flume and two thousand, two hundred feet of precast concrete flume. Detailed investigations of the damage this spring revealed that the entire mile of flume would have to be removed, the gravel filter bed taken out and replaced and both the longitudinal and off-take drains removed, cleaned and replaced.

It became evident that the element of time as well as economics was becoming a factor to be considered. After due deliberation it was decided that this entire mile of flume would be removed and replaced with an open ditch and drop structures. In the removal of this flume much of the material was salvaged and used elsewhere or stock-piled for use at a later date. The open ditch has now been constructed complete with five poured in place concrete drop structures and the necessary rip-rap.

The main highway ditch on the north side of the highways had become badly eroded during previous runoff periods. This ditch was re-graded and precast concrete check structures were intalled in the ditch immediately downstream of all culverts crossing the highway. This will make it possible to distribute the runoff water in an orderly fashion so that all available water courses may be utilized to the fullest extent without overtaxing any one course.

Some of the concrete flume which was removed was used as slab rip-rap for erosion protectoin at the downstream end of drop No. 1. Drop No. 3 suffered from severe erosion due to difficult soil conditions and a minor design deficiency. This structure was therefore rebuilt and protected against further subsurface erosion by the polyethylene and hydromat membrane which was laid two feet below bed grade for a distance of sixty feet upstream from the front cutoff wall of the structure.

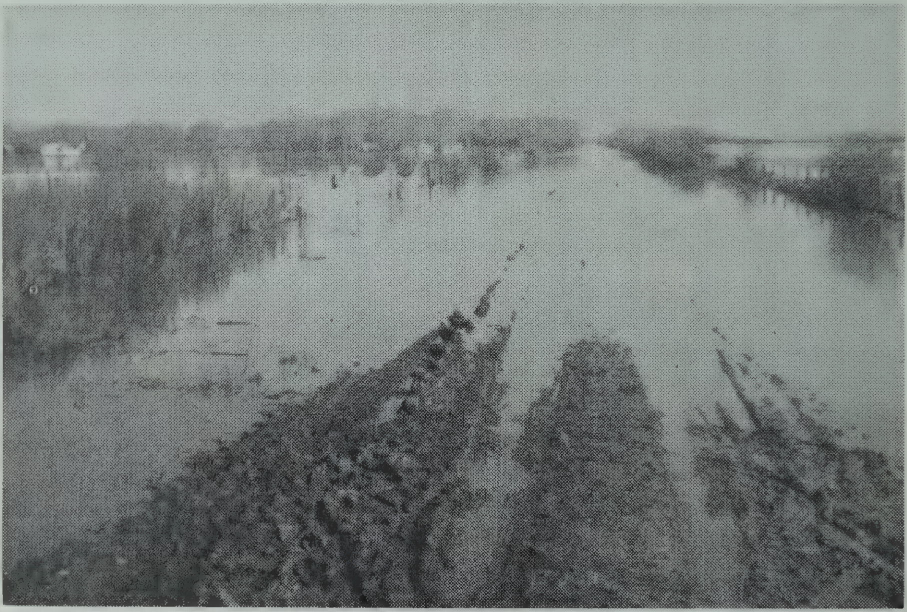
Some further trimming and general clean-up remains to be done on this project in 1960 together with the construction of a structure between drop No. 1 and drop No. 3 to insure sufficient tail water depth in drop No. 1 so that severe erosion and undermining of the structure will not occur.

East and West Prairie Rivers Project

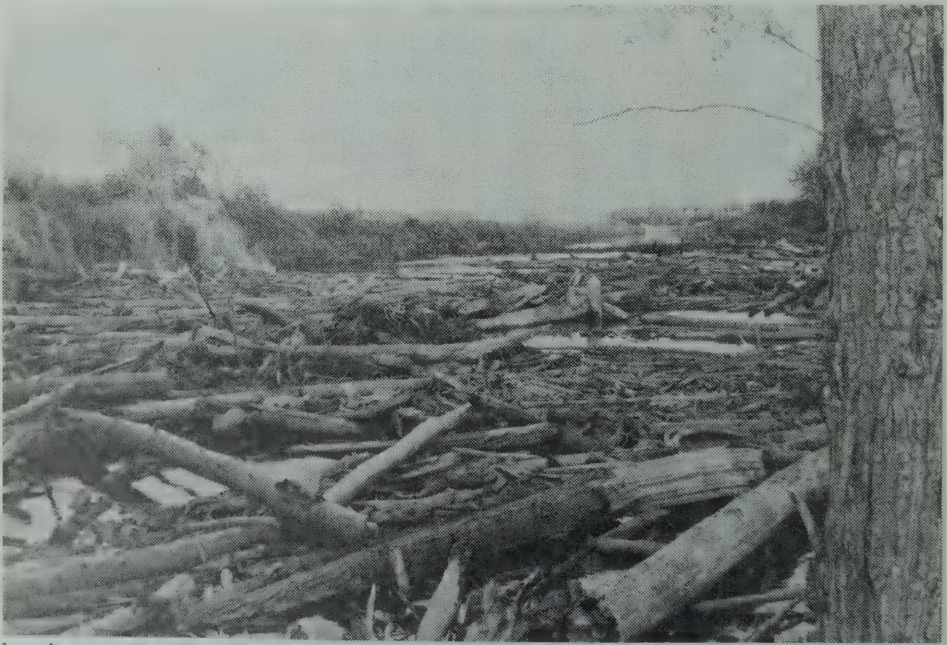
The surveys began in 1958 to establish vertical and horizontal ground control for aerial survey mapping of the East and West Prairie Rivers Project and continued throughout the 1959 season. As this information was obtained it was forwarded to the Technical Division of The Department of Lands and Forests, who are continuing to prepare the required contour maps of the area. This work has involved some 300 miles of levels, 10 miles of transit work and two miles of cross-sectioning of the river channel. This represents 185,000 acres of ground control, 75,000 acres of which have been mapped with ten foot contours by the Department of Lands and Forests.

Unfortunately the low runoff in the spring of 1959 did not permit the obtaining of anticipated information on discharges and silt loads for which gauging stations were installed in 1958. In addition to these gauges two crest stage gauges were also installed this year.

As reported last year, a proposal had been made to remove the large trees adjacent to the upstream portion of these rivers and that it was hoped that such a program could be carried out during the winter months. This program did materialize and some 18 miles of the West Prairie River channel was cleared of logs and debris which had fallen into the river channel, or were on the verge of falling into the river due to erosion of the banks. Although the discharge of the river has not since reached a volume whereby the effectiveness of this program could be observed, it



Flooding on the northern outskirts of High Prairie caused by spring runoff from the West Prairie River. A flooded cemetery and residences can be seen on the left and flooded farmland on the right. The road is the main district highway serving the communities to the north.



Log jam on the West Prairie River north of High Prairie which is instrumental in causing the flooding shown in the above picture.

is thought that such efforts cannot help but alleviate the log jamming condition on the river, and consequently a similar program is presently underway again this winter.

During the year, an observation trip was made by plane by the Water Resources engineer in charge of the project. He was accompanied by a representative from C.B.A. Engineering of Vancouver who prepared and submitted a report on his opinions of the problem and its solution. This report confirmed much of our own thinking and proposals and further substantiated our undertaking to remove the trees and debris along the upper reaches of the river channel.

It was further reported last year that a second dam on the Heart River was under consideration in order that greater control could be exercised on the flood waters of the Heart River which are contributory to the general flooding problem in the High Prairie-Grouard area. The construction of this dam consisting of 190,000 cubic yards of compacted earth fill, together with its double conduit spillway control, was begun in August of 1959. Cold weather necessitated termination of this work before completion, however, sufficient fill has been placed in the dam section so that protection of the work so far undertaken has been insured. This project will be completed without difficulty in 1960.

The benefits of this dam, with regard to domestic water supply and recreational facilities, has been outlined previously in this report.

William Pearce Project

In 1919 William Pearce, noted early advocate of irrigation in the west, first proposed what is now commonly referred to as the William Pearce Project. It was his idea that the dry area from Hanna east to Regina in Saskatchewan could be irrigated by the North Saskatchewan and Red Deer Rivers. His plan was to supply water for stockwatering, irrigation and municipal purposes. The plan envisioned the establishment of a large stock producing area with a minimum production of grain. It was with this in mind that in 1922 Mr. Pearce wrote a letter to Mr. N. G. Phillips of Regina:

> "The most valuable utilization of water in this country is for growing forage. Of course, in the rotation of crops a certain amount of grain must from necessity be grown, but throughout most of the west, if grain growing is to be the sole object, I do not know that I would be an advocate for irrigation at all, nor would one care to make his permanent home in a district adapated only for grain growing. I am styled by some as the "Father of Irrigation" in Alberta, but I never advocated irrigation for grain growing excepting so far as its growth is necessary in the rotation of crops. If this country is going to amount to anything, the sooner we get into stock on a very considerable scale the better. The money spent on same will probably many times be returned and be the solution of our troubles. A large portion of this country can be used with advantage to grow forage for stock, which cannot be profitably utilized for growing grain. Adjacent to those irrigated portions lie very considerable areas whose value lies in pasturage."

In 1921-22 The Reclamation Service carried out surveys to determine the feasibility and canal locations. In 1939 The Prairie

Farm Rehabilitation Administration started investigations which have continued to date, first under E. K. Phillips, then later under S. H. Hawkins and A. B. Cook and now under W. Huddleston.

During these surveys many changes have been made. New reservoirs have been located; the canal lines have changed, in fact, the basic concept of the project has changed to irrigation rather than stock production. It is our intention to continue the investigation but to again lay emphasis on the stockwatering phase of the project, together with its potential as a source of water for domestic, industrial and recreational use. The project also has significant conservation and flood control possibilities, the benefits of which would extend to an appreciable percentage of the populace of the province.

In the 1958 Annual Report reference was made to our work on the Clearwater River under the title of Headwater Storage. Late in the same year, further study was made of the Fallentimber or Boggy Lake reservoir site from aerial photography and contour plans of the area compiled in 1956. This year the William Pearce Scheme will be divided into the following headings:

(a) **Boggy Lake or Fallentimber Reservoir Site**

This proposed site straddles two drainage systems. The major and most important with regard to flow is the Fallentimber River while the minor one is Silver Creek. A shallow divide exists in what is considered to be a valley created by a fault line. Late in 1958 the Fallentimber dam site was surveyed and cleared to permit accessibility for soil testing equipment. This year the Silver Creek dam site was surveyed and made ready for subsequent soil testing. More ground control was required on this site and so approximately 35 miles of levels were run to attain this. Exploratory drilling is being done on the Fallentimber River site to determine the depth of overburden, dip and strike of the underlying strata. This information will be correlated to the photogeological report made by P.F.R.A. in June of 1956.

(b) **Little Red Deer River**

This site received consideration from this office in 1957 when a study of twenty-five foot contours of the area showed that there was a possibility of storing 200,000 acre feet of water with an 80 foot high dam. Two possible sites were chosen on the basis of topography and surveyed. Some test holes were drilled with the Department's drilling equipment and much gravel was encountered. However, there was evidence of a sandstone type of bedrock a mile downstream. The site was covered by aerial photography in the fall and a survey party will obtain the ground control in the near future. Some 22 miles of levels and five miles of transit work were completed this year. It is unfortunate that much of the land that would be inundated by the reservoir is patented and very fertile.

(c) **Raven Red Deer River Site**

The first reference we have on the site investigated this summer was on a plan by E. K. Phillips dated March 1940. An approximate profile is shown together with the Long Canal proposal which would have its beginning at this reservoir site. The majority of the 35,000 acre feet of storage is in the Raven River Valley as the Red Deer River has a relatively step slope in the vicinity of the proposed dam. Geodetic levels were carried to the site from Bowden, a distance of sixteen miles. A center-line was cleared and a profile surveyed. Soil classification was made of the cohesive material over the gravel. Early in 1960 more detailed exploratory drilling will reveal the extent of the underlying gravels and the dip and strikes of the bedrock strata.

(d) Stony Creek

In the 1922-23 Annual Report of The Reclamation Service it was reported that this site had some reconnaissance work done on it. The actual reservoir could accommodate approximately 52,000 acre feet of storage, however, Stony Creek is far from capable of supplying this, so a short canal line was proposed from the James River. A large portion of this canal was properly surveyed while the remainder was roughly located.

During the summer of 1959, survey crews brought geodetic levels from Sundre to the proposed Stony Creek damsite and the location of necessary ground control was obtained from the Technical Branch of the Department of Lands and Forests for the reservoir area and a portion of the proposed canal. Approximately forty miles of levels were required to establish bench marks into the site and an additional thirty-five miles were required to complete the vertical ground control. Poor access conditions and out of date aerial photographs hampered the progress of this work to some extent.

Further study will probably be done in 1960, however, there are other facets of the overall project which are considered to be more important at the present time.

(e) Red Deer Gap Site

The Water Resources this year initiated an investigation of the geology of this site by engaging Hunting Technical Exploration Services Ltd. to submit a photogeological evaluation, field and seismograph investigation reports of the site. These reports are under scrutinization by various engineers of the Water Resources staff. The site appears to have good possibilities as bedrock is very near the surface at the side of the valleys and is at the surface in the center of the valley.

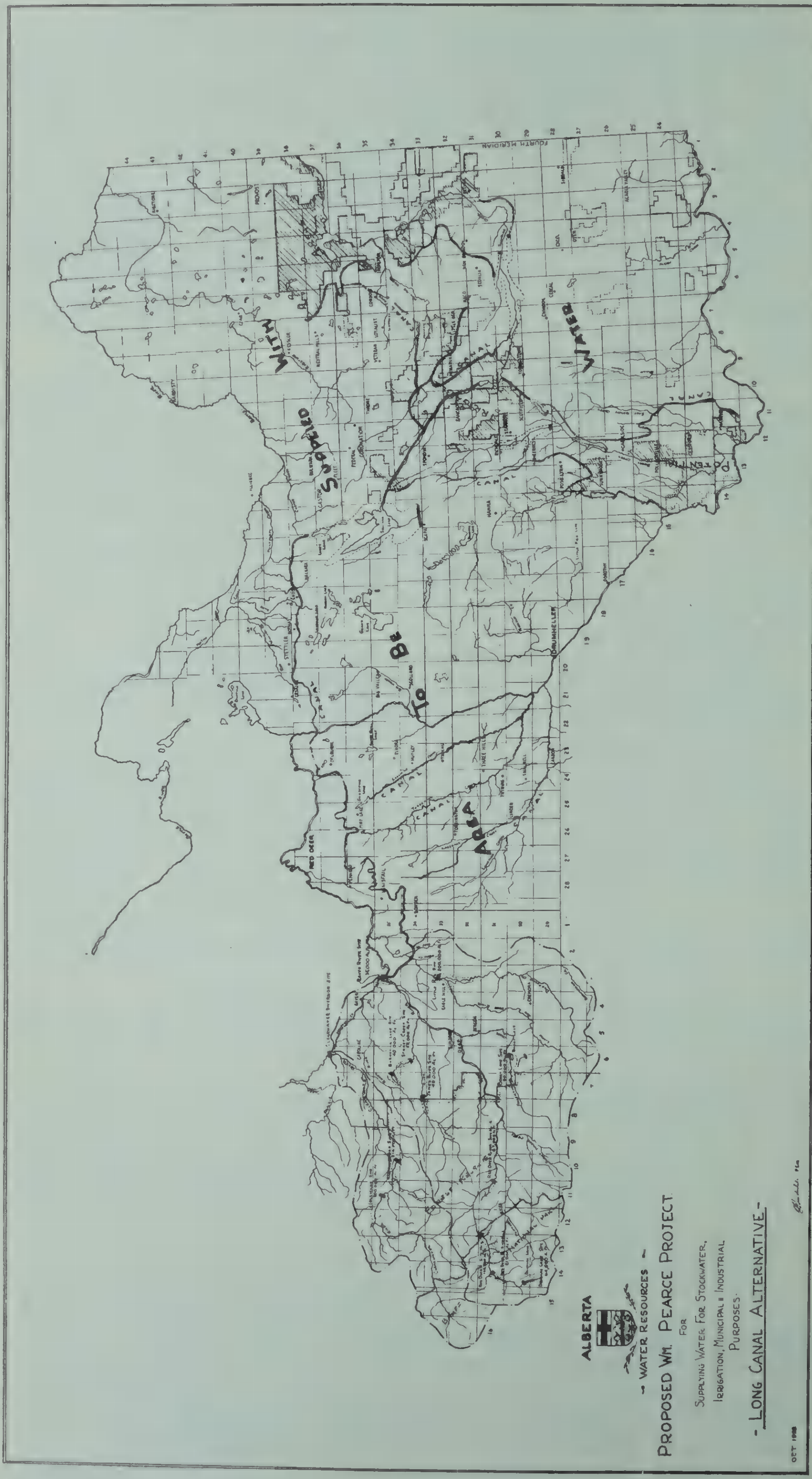
A dam in this location would have a far reaching effect on the unpredictable Red Deer River during flood stages and would insure a reasonable flow of water during the winter.

(f) Panther River Gap Site

This site was investigated by Hunting Technical Exploration Services Limited along with the Red Deer River Gap Site. The material is under study but the report does point to deep lying bedrock covered by loose rubble which is not desirable.

(g) Bearberry Creek Site

Since the flood of 1954 at Sundre, Water Resources engineers have been endeavouring to find a reasonable solution to the raging Bearberry Creek. In 1956 work was undertaken on the river channel in an attempt to contain the flow. In 1959 the channel required maintenance as the creek was again beginnnig to meander. The proposal of a dam to control the flood waters was considered. From maps and field investigations a site was located ten miles upstream from Sundre, however, topographical information in this area is very limited. Ground control was therefore


ALBERTA
- WATER RESOURCES -
PROPOSED WM. PEARCE PROJECT
FOR
SUPPLYING WATER FOR STOCKWATER,
IRRIGATION, MUNICIPAL & INDUSTRIAL
PURPOSES.
- LONG CANAL ALTERNATIVE -
POTENTIAL
AREA
TO
BE
SUPPLIED
WITH
WATER
CANAL
FOURTH MERIDIAN
RED DEER
DRUMHELLER
HANNA
OCT

obtained for a nine square mile area to find out the storage capacity of a reservoir at this site. Twenty miles of levels were surveyed into the site from a geodetic elevation in Sundre. Approximately fifteen miles of levels were completed for vertical control while one and one-half miles of chainage was required. The ten foot contour map of the area is expected from the Technical Branch of the Department of Lands and Forests early in 1960.

Long Canal Investigation

The William Pearce scheme encompasses an area roughly 240 miles long and 60 miles wide considering the high line canal proposal. This canal would have its beginning in Twp. 35, Rge 3, W. 5 Meridian at the junction of the Raven and Red Deer Rivers. It would then traverse the high land via Bowden, Innisfail, Pine Lake, Delburne across the Red Deer River in a syphon, then bypass Erskine, Stettler, Botha, Gadsby and terminate in Sullivan Lake. The predominate theme of the scheme is to supply water for stockwater, irrigation, municipal and industrial purposes. From the plate it can be seen that there is a wonderful possibility of supplying water to lands along the Threehills, Kneehills and Ghostpine Creeks.

Early in the spring a camp was set up west of Bowden and a series of geodetic bench marks surveyed along the proposed canal line. In September aerial photography was taken of the proposed canal location. The Technical Branch of the Department of Lands and Forests gave full co-operation and the ground control program began. Approximately 160 miles of secondary levels were run in placing the bench marks. Every bench mark was checked by the closed circuit method. Approximately 250 miles of levels have been run obtaining the elevations of the vertical ground control. Some 45 miles of chaining has been undertaken for the horizontal control. This work was carried out over an area of 235 square miles. Approximately 280 test holes were drilled and soil classification made on them.

In 1960 the program will continue east on the 98 mile proposed canal.

HYDROLOGY

In the field of hydrometric surveys, negotiations on the cost sharing agreement were completed by the committee on federal-provincial co-operation and the draft has been approved by the federal and principal governments. The final agreement is being prepared for signature by the federal government.

A report has been prepared on the future requirements of the Province of Alberta for complete hydrometric coverage and it will be presented at the next meeting of the committee.

During the year, six new hydrometric stations were completed and one abandoned. The new stations were located on the Little Smoky River near Guy, the East and West Prairie Rivers near High Prairie, the Vermilion River near Vermilion and the Clearwater River near Idlewyld. The abandoned station, the Red Deer River at Nevis, was replaced by the Red Deer River at Drumheller. Also, during the year, the Federal Water Resources rehabilitated two stations and installed recording gauges. These were on Willow Creek at Nolan and Stimson Creek at Pekisko.

The above work and pertinent negotiations were carried out by the Calgary District Office.

The Engineer from the Calgary Office also attended a symposium on hydrology held in Ottawa which was sponsored by the Research Council of Canada. This symposium further confirmed the ardent contention of Canadian hydrologists that this country is sadly lacking in basic hydrological data. It also provided an opportunity to view the whole field of hydrology and its relationship to our own Alberta studies.

As outlined in the 1958 report, the necessity for knowledge about the flow characteristics of any river or stream which one intends to use or control, prompted the Water Resources Branch to continue the compilation and studies of runoff features of water courses in this province. A summer staff continued the compilation from readily useable tables and thence to graphs, the ultimately most desirable form, of the thousands of individual pieces of information reported in the Water Resources Papers of the Dominion Department of Northern Affairs and National Resources.

The following is a summary of basic work done this year:

1. 242 daily discharge hydrographs were plotted representing 88,400 station days of record.
2. 207 monthly discharge hydrographs drawn reveal 2,484 station months of data.
3. 40 plots showing the maximum mean monthly discharge per year and six plots of yearly mean discharge were completed.
4. Eight frequency curves of maximum daily discharge per year were drawn.

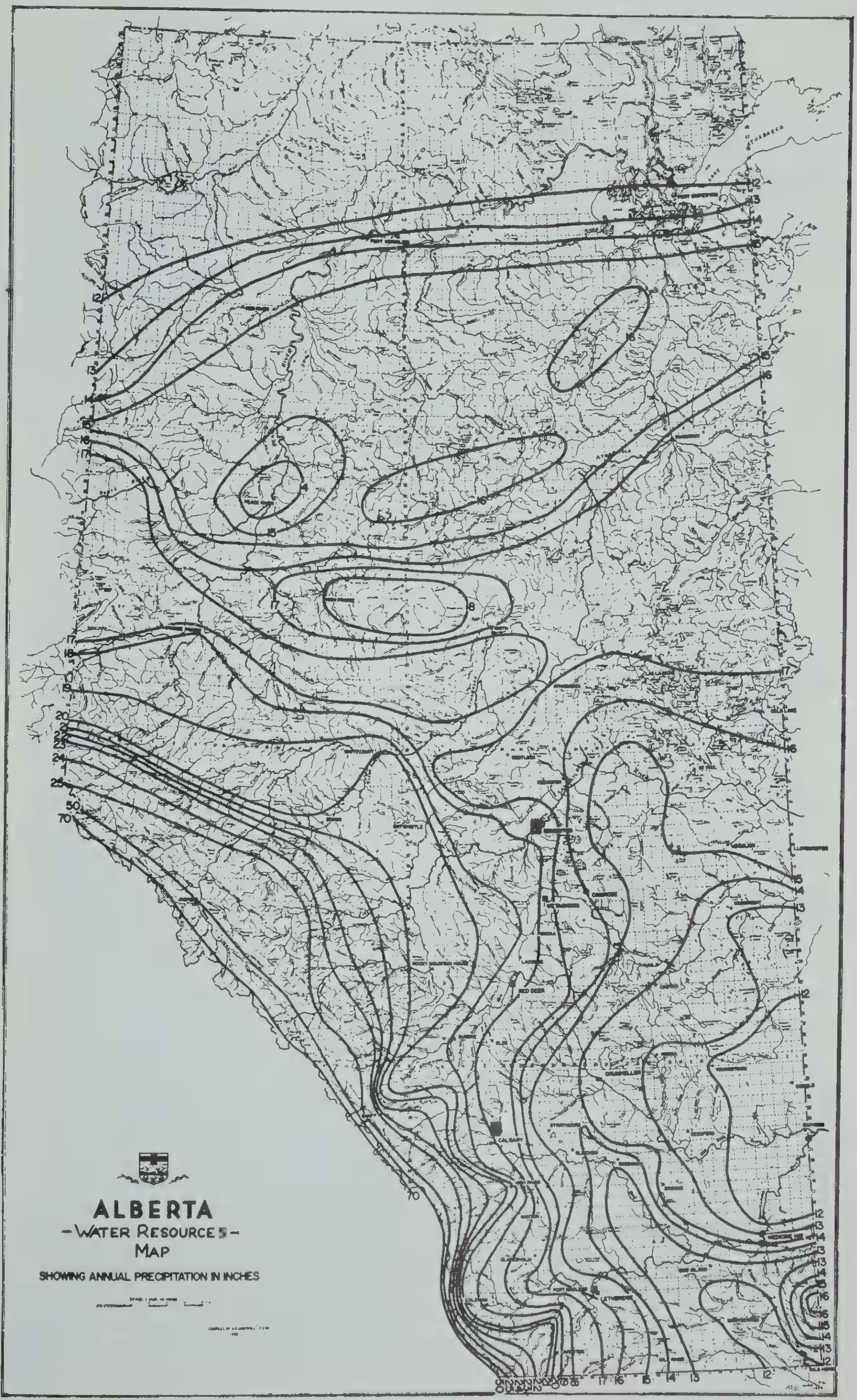
In addition to this basic work of compilation, several tentative studies were begun in the direction of discovering similarities in flow characteristics between different streams. Our ultimate aim is to be able to correctly predict both average and extreme behaviour of any water course in this province.

Apparently Alberta is ahead of the rest of Canada in province-wide hydrological studies. Increasing public requests for copies or interpretations of our material, as well as its value in the design and planning work of our own Department, encourage further work along these lines. Plates are shown in this report as a typical sample of the results of these hydrological studies. The North Saskatchewan River at Edmonton has been chosen for illustration purposes so that the plots will also be of local interest.

Snow Surveys

A large part of the annual flow of Alberta streams and rivers occurs in the spring and results primarily from melting snow or runoff. Runoff as stream flow is that portion of snow melt which finds its way into natural channels. Its quantity is best determined by measuring the volume of water in the stream draining the watershed.

The Water Resources Office is often consulted about, or requested to design and construct, channels for the purposes of drainage of flood control where the major part of the runoff is derived from melting snow. The first criteria in the design of open flow channels or other hydraulic structures is to determine the quantity of water that may be expected. With adequate hydrometric records this is not difficult, but in areas where records are non-existent this task is not so easy. Most of the major stream and rivers in Alberta have adequate records but such is not the case in small watersheds.


ALBERTA
- WATER RESOURCES -
MAP
SHOWING ANNUAL PRECIPITATION IN INCHES
ATHABASCA
PEACE RIVER
ROCKY MOUNTAIN HOUSE
RED DEER
CALGARY
DRUMHELLER
MEDICINE HAT
LETHBRIDGE
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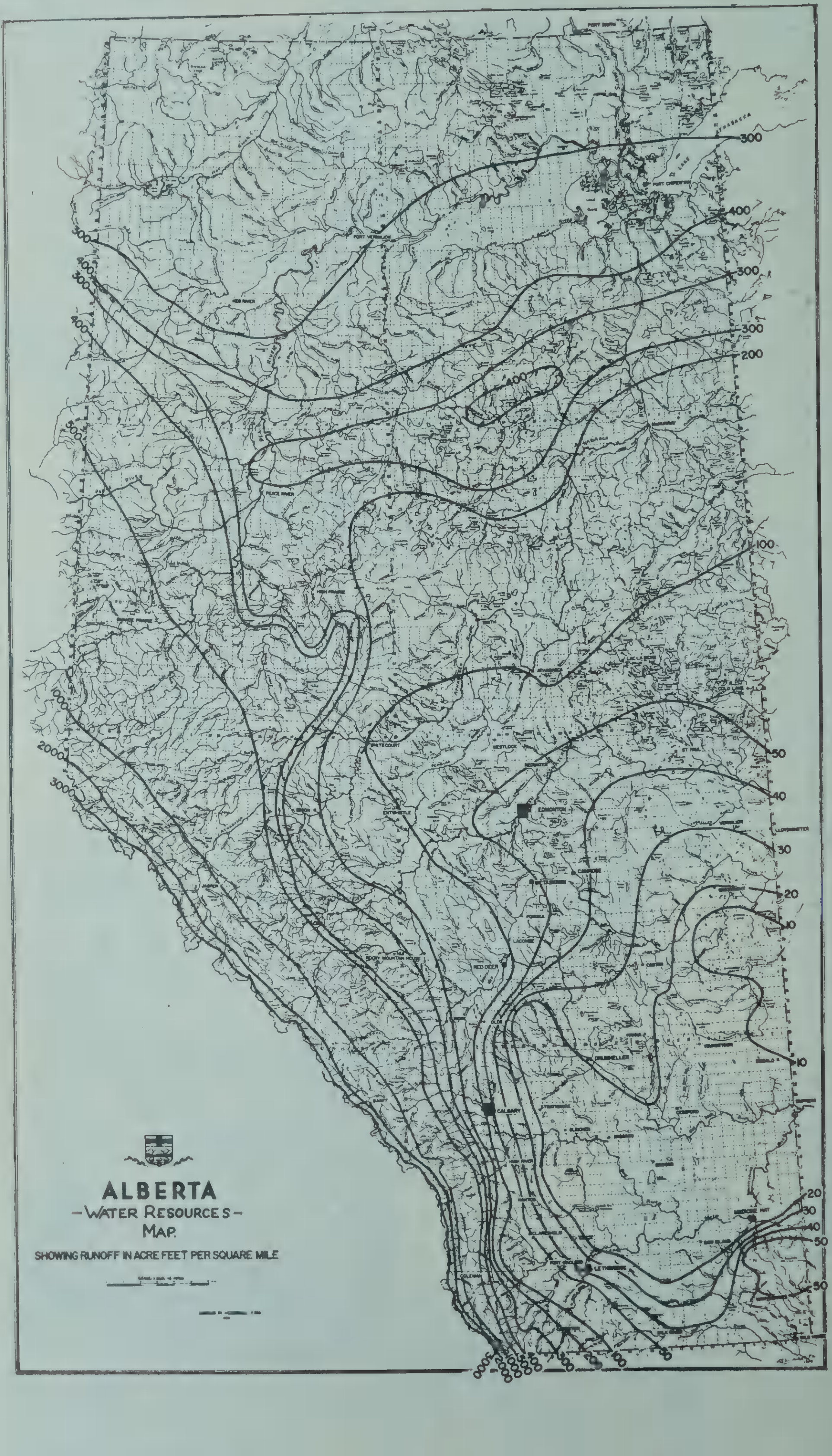
ALBERTA
-WATER RESOURCES-
MAP.
SHOWING RUNOFF IN ACRE FEET PER SQUARE MILE
ATHABASCA
FORT CHIPEWYAN
PORT VERMILION
PEACE RIVER
WHITECOURT
EDMONTON
LLOYDMINSTER
ROCKY MOUNTAIN HOUSE
RED DEER
DRUMHELLER
CALGARY
LETHBRIDGE
MEDICINE HAT
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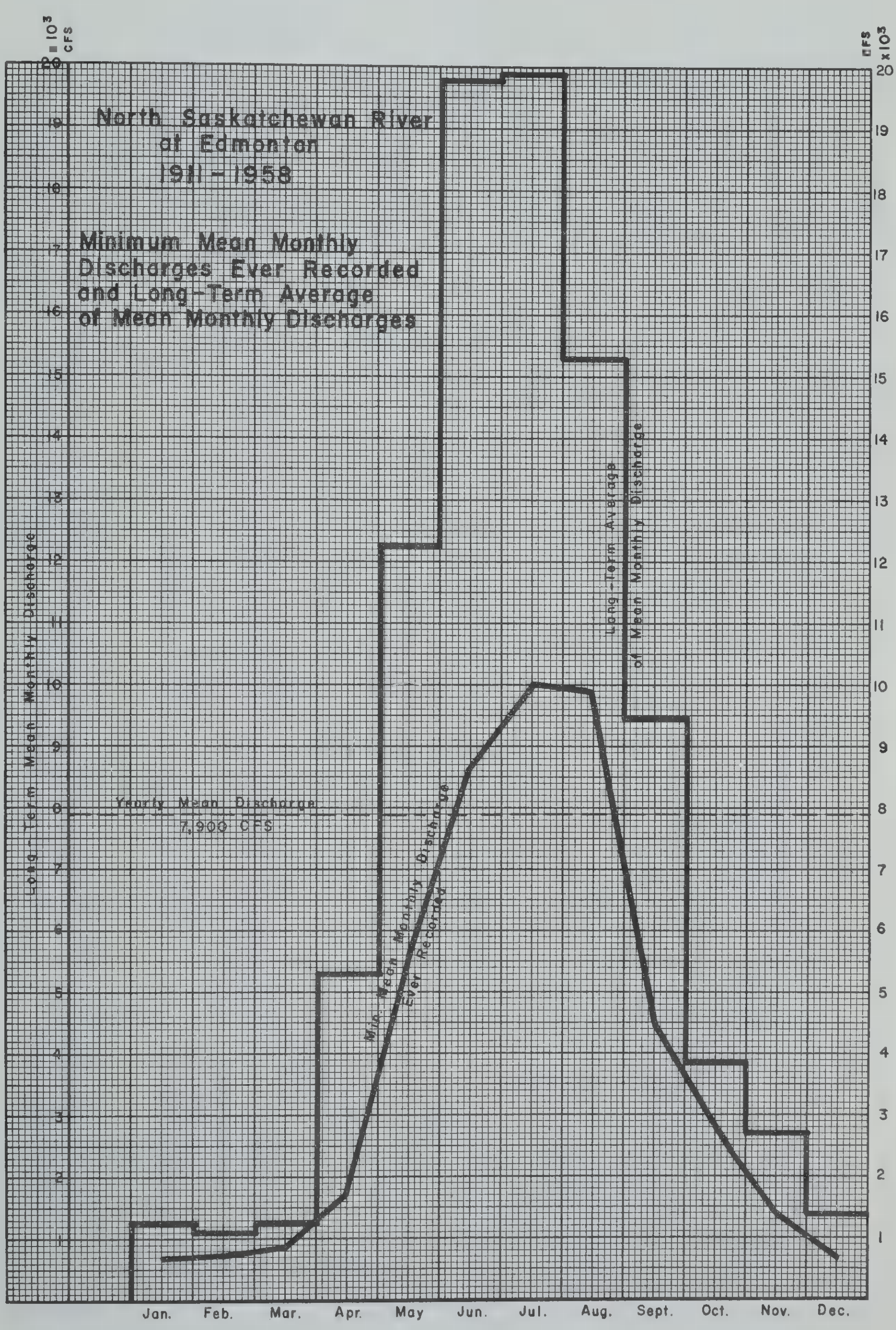
North Saskatchewan River
at Edmonton
1911 - 1958
Minimum Mean Monthly
Discharges Ever Recorded
and Long-Term Average
of Mean Monthly Discharges
CFS x 10³
Long - Term Mean Monthly Discharge
Yearly Mean Discharge
7,900 CFS
Min. Mean Monthly Discharge
Ever Recorded
Long-Term Average
of Mean Monthly Discharge
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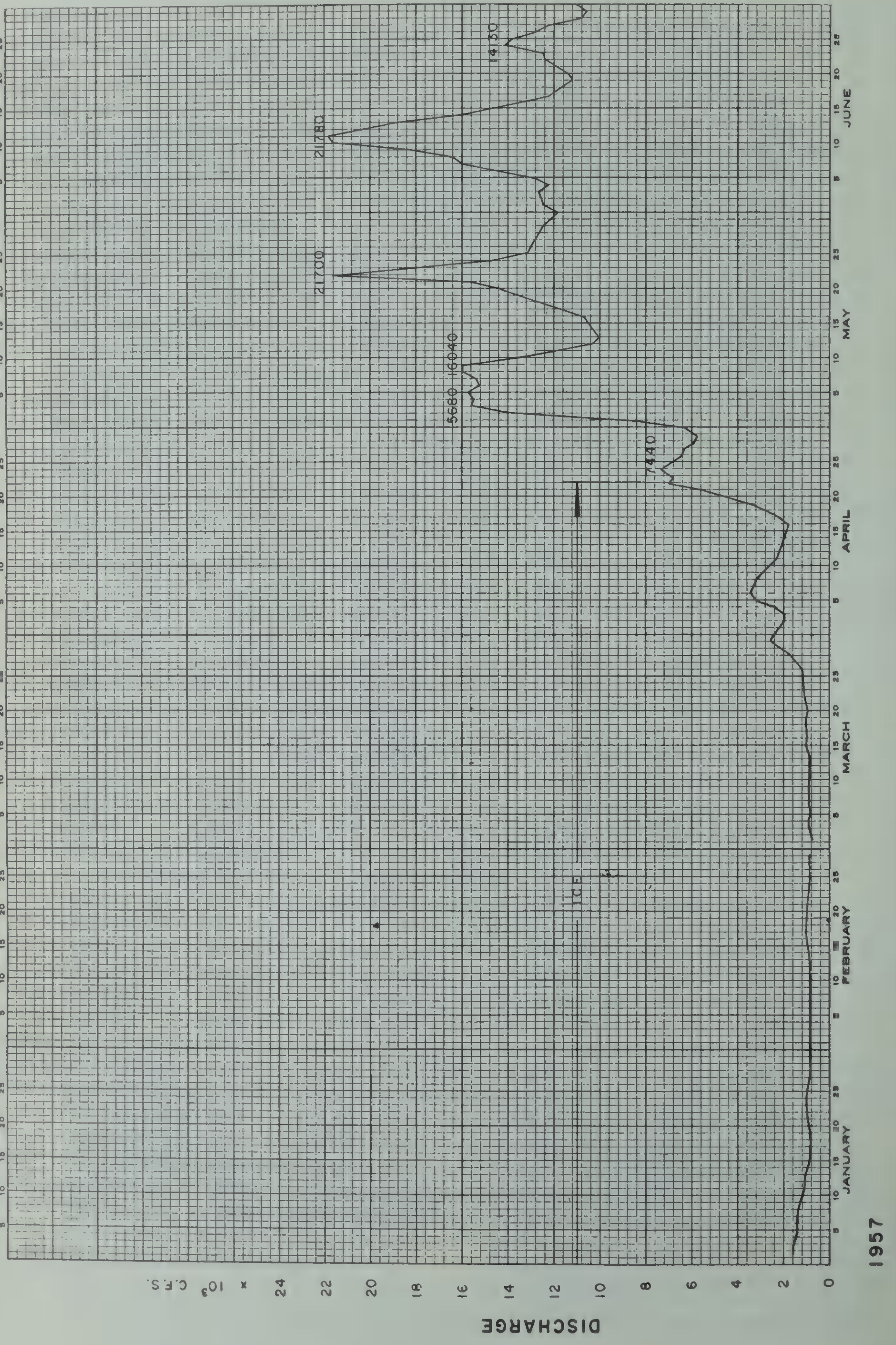
DISCHARGE
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8
10
12
14
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18
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22
24
JANUARY
FEBRUARY
MARCH
APRIL
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1957
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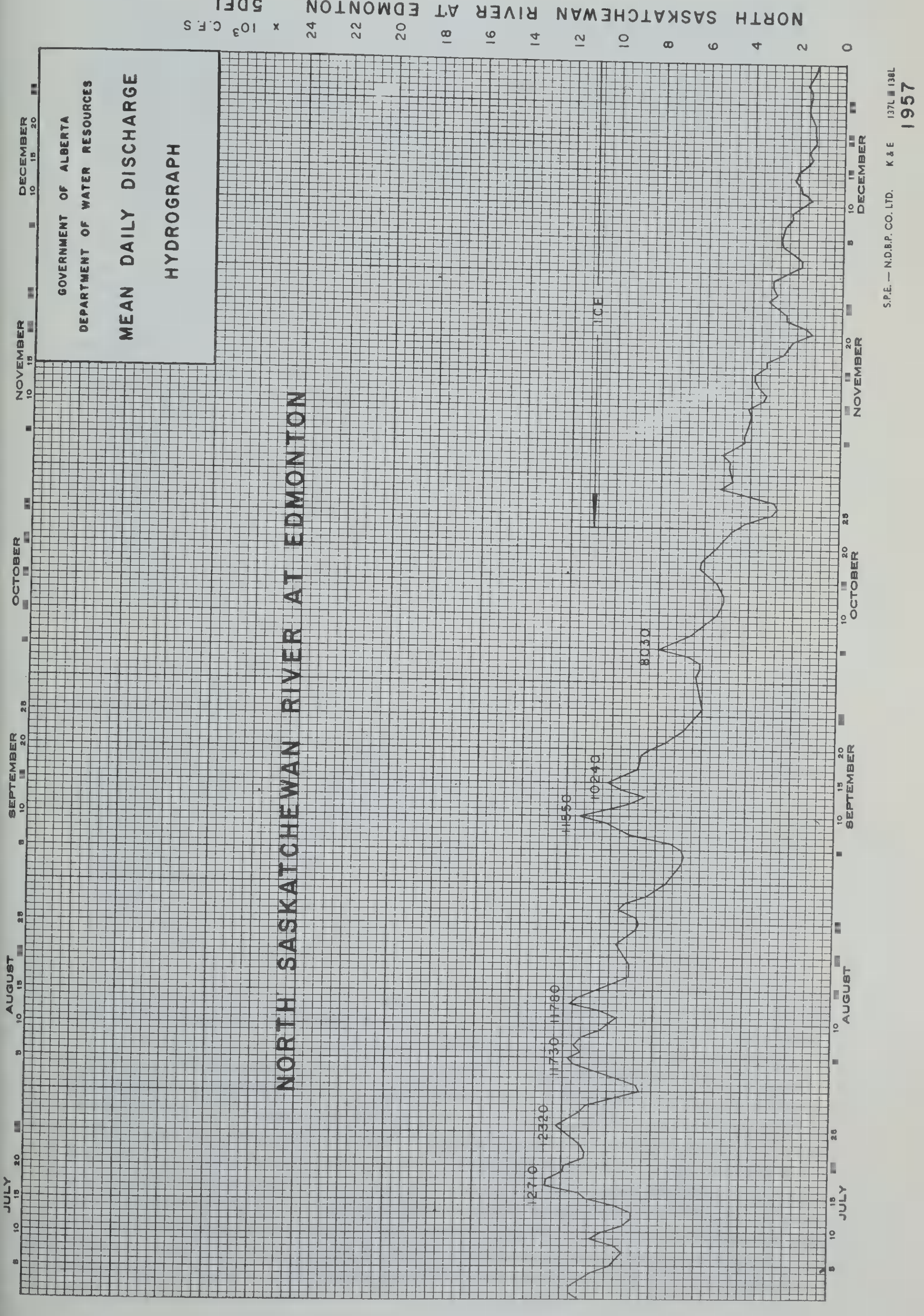
NORTH SASKATCHEWAN RIVER AT EDMONTON
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x 10³ C.F.S
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GOVERNMENT OF ALBERTA
DEPARTMENT OF WATER RESOURCES
MEAN DAILY DISCHARGE
HYDROGRAPH
NORTH SASKATCHEWAN RIVER AT EDMONTON
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
12710
12320
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11780
11550
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S.P.E. — N.D.B.P. CO. LTD.
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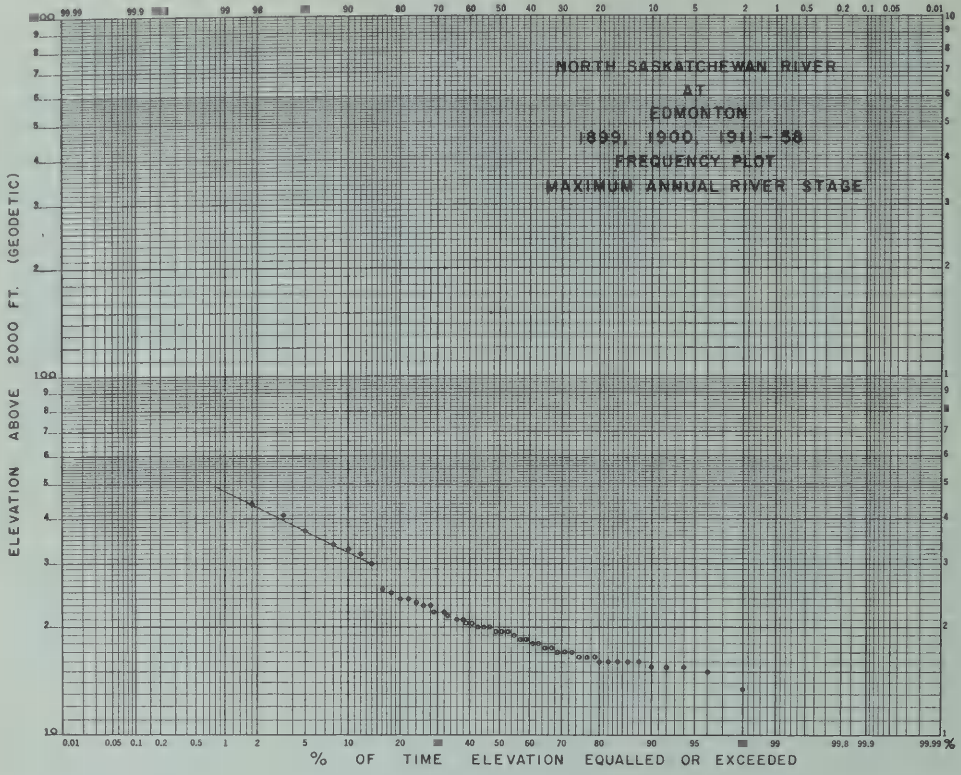
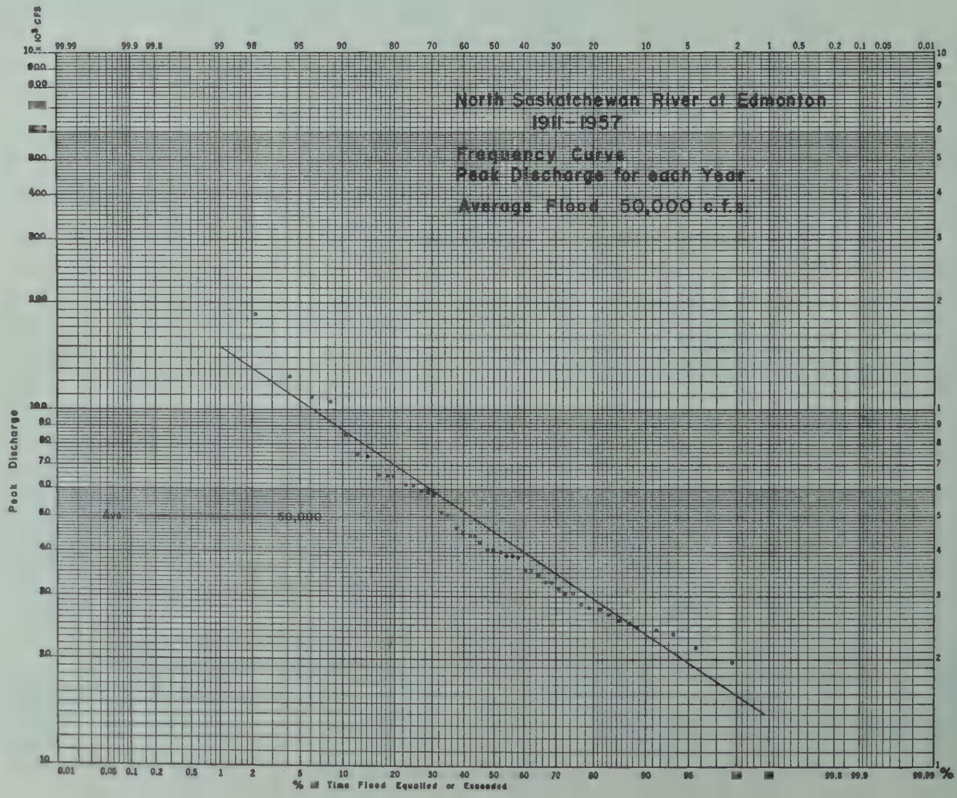
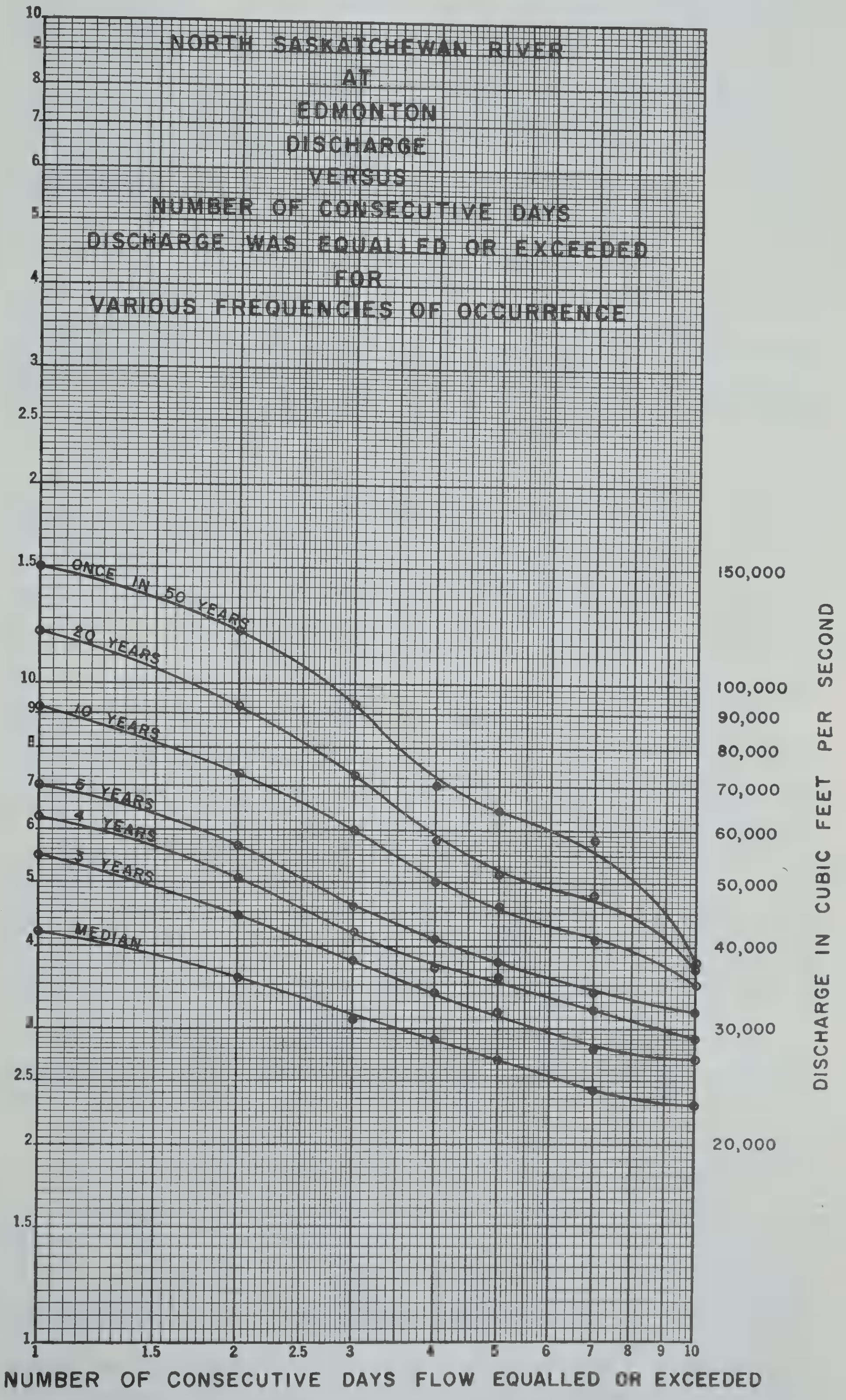

NORTH SASKATCHEWAN RIVER
AT
EDMONTON
1899, 1900, 1911 – 58
FREQUENCY PLOT
MAXIMUM ANNUAL RIVER STAGE
ELEVATION ABOVE 2000 FT. (GEODETIC)
% OF TIME ELEVATION EQUALLED OR EXCEEDED


North Saskatchewan River at Edmonton
1911–1957
Frequency Curve
Peak Discharge for each Year.
Average Flood 50,000 c.f.s.
10³ CFS
Peak Discharge
Av. 50,000
% of Time Flood Equalled or Exceeded


NORTH SASKATCHEWAN RIVER
AT
EDMONTON
DISCHARGE
VERSUS
NUMBER OF CONSECUTIVE DAYS
DISCHARGE WAS EQUALLED OR EXCEEDED
FOR
VARIOUS FREQUENCIES OF OCCURRENCE
ONCE IN 50 YEARS
20 YEARS
10 YEARS
5 YEARS
4 YEARS
3 YEARS
MEDIAN
150,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
DISCHARGE IN CUBIC FEET PER SECOND
1
1.5
2
2.5
3
4
5
6
7
8
9
10
NUMBER OF CONSECUTIVE DAYS FLOW EQUALLED OR EXCEEDED

To augment this information, The Water Resources Office initiated a snow survey of small watersheds in March of 1958. Snow surveys determine accurately and quickly the amount of water accumulated in the snow pack. During the spring runoff period, the stream that drains the watershed is measured and thereby a correlation between snow survey and runoff is obtained.

Besides using snow surveys for design of drainage and flood control projects, this data is useful in the forecasting of future water supplies and runoff. Snow surveys of three watersheds were started: the Wabash Creek, the Paddle River and the Pembina River.

POWER DEVELOPMENT

Steam Generation

In the steam generation field no new units were installed in 1959. The City of Edmonton is installing a 75,000 kilowatt steam unit which is to be in operation by the fall of 1960. Calgary Power Ltd. has its No. 3 unit for its Wabamun Plant of 150,000 k.w on order and it is to be in operation for the fall of 1962.

Gas Turbines

The City of Edmonton installed its second gas turbine of 30,000 k.w in 1959. Canadian Utilities Limited have ordered a 30,000 k.w gas turbine for their Vermilion Plant and will move the gas turbine, presently installed there, to Valleyview. This unit is rated at 7,500 k.w The move and the new installation are both to be carried out to be ready for the fall of 1961.

Water Power

There have been no new water power installations made in 1959. Calgary Power Ltd. is increasing its capacity by a 50,000 k.w additional unit for the Spray Plant and 30,000 k.w additional unit for the Rundle Plant, a total of 80,000 k.w. Both these units are to be in operation by the fall of 1960.

Work has commenced on the Big Bend Hydro Power Development on the Brazeau River 96 miles southwest of Edmonton. For some years, this river has been regarded as a potential hydro power producer. In 1945 this matter came under discussion, particularly with regard to its association with the existing flooding problem on the Pembina and Paddle Rivers. In June of the same year a Water Resources preliminary survey party investigated the feasibility of diverting the Pembina River into the Brazeau and the possible dam sites on the Brazeau River which would be conducive to the development of hydro-electric power. Cross-sections of the various dam sites were obtained and plans of the reservoir areas compiled.

In 1955 and 1956 studies on the Pembina River flood control were again revived. This, together with concern over low winter flows in the North Saskatchewan River at Edmonton, prompted the Water Resources engineers to give further thought to the original idea of diverting the Pembina River waters into the Brazeau River. Newly published maps were scrutinized and these efforts led to the discovery of two new potential damsites on the Brazeau River located approximately thirty miles southwest of Drayton Valley. Several reconnaissance parties attempted to find an access route to these sites so that they might be given a field investigation. It was found that the heavy growth of bush and expanse of muskeg surrounding the area would make anything except a winter expedition a rather difficult undertaking. A request for assistance was therefore made to the Royal Canadian Air Force and arrangements developed whereby a large air-rescue helicopter was put at the disposal of the Department.

In June of 1956 a party of Water Resources engineers flew into the site and conducted preliminary investigations. The reports of this party suggested that conditions were favourable for the construction of a dam. The existence and potentialities of the sites were therefore made known to Calgary Power Ltd. During the next two years Calgary Power carried out extensive and detailed investigations. The original data obtained by the reconnaissance party was confirmed and this year the first contracts were awarded for the construction of a dam.

The estimated cost of the initial development, including the first 150,000 k.w. unit, is $45,000,000. Each additional unit of 150,000 k.w. added to the plant will cost approximately $9,000,000. Present planning calls for four units of 150,000 k.w.

The main dam is a 10,000,000 cubic yard earth fill two miles long with a maximum height of 250 feet. Two auxiliary dams consists of the Nelson Creek dyke of 1,600,000 cubic yards, and a containing dam north of the north end of the main dam of 600,000 cubic yards.

The reservoir contains 930,000 acre feet of live storage and will cover an area of some thirty-seven square miles. In a minimum flow year there will be 710,000 acre feet of water available for storage. This storage will first be used in the winter of 1963-64 but the reservoir will not be full that year due to the fact that the dead storage must be filled. The first year that full storage may be available will be 1964-65.

The power house is down stream from the dam at the end of a twelve mile canal which, in effect, is a small lake or head pond of area approximately 5,000 acres. At the head end of the canal is a pump station at the main dam which will have installed two pump turbine units. Water from the top two-thirds of the reservoir live storage will pass, by gravity, through these units to the canal generating 7,500 k.w from each pump with a total of 15,000 k.w for the station. These same units will be used as pumps to pump the water from the bottom one-third of the live storage to the canal. A head of 400 feet will be developed at the turbines.

Initial development will take four years to complete—Autumn 1959 to Autumn 1963.

CALGARY DISTRICT OFFICE

The work undertaken by the Calgary Office in the hydrometric field has been reported in the Hydrology section of this report. In addition, this office began a program of establishing a network of crest stage gauges in the Calgary area on otherwise ungauged drainages so that it will be possible to obtain, at least, the peak flows of these streams. To date fifteen have been installed and another twenty-five will be installed before the spring of 1960. The program is of an experimental nature and if it gives the desired information, it will be expanded to cover other areas. The same program is also being extended to the central and northern areas of the province.

Plans were prepared and work started on the installation of a series of simple check structures to take care of the erosion problem at Cluny. Weather prevented the final completion of the work which was done by Water Resources crews, but the structures are complete and should take care of the spring flow. The final dressing and seeding of the area will be completed in the spring, 1960. The cost of the repairs will be approximately $6,000.

On the Little Bow canal system at High River, repairs were made to the two main structures, the turnout from the Highwood River and the holdup structure. The two structures were gunited and the gates repaired or replaced at a cost of approximately $10,000. A new canal drainage culvert, which will be placed as soon as weather permits, will complete the repairs.

The Highwood River protection works weathered the year's runoff extremely well and it was not necessary to do any maintenance on them. There was no real high water on the river during the year. A steady, above normal flow occurred due to the spring weather conditions.

Preliminary surveys were completed in connection with the possibility of draining Pakowki Lake north into Peigan Creek. The project was found feasible, but expensive. It was filed for further survey work when and if the project is found to be in the best interest of all concerned. Surveys were made along the east shore to determine if the lake was inundating private lands as claimed by the farmers.

Lake level surveys were continued during the month of September in the Calgary area but due to the inclement weather it was only possible to complete four lakes. All surveys are being plotted and reports will be completed before the end of the fiscal year. The Glenmore reservoir report has been completed and supplied to the City of Calgary.

One meeting of the Advisory Board to the Special Areas was held in 1959 and this resulted in the Calgary Office investigating various proposals made by the Board.

A check was made to see if the channel of Sounding Creek between Pemukan and Grassy Lake was plugged. Surveys determined this was not the case. Investigations were made regarding additional storage on East Berry Creek and the use of water from Berry Creek. The P.F.R.A. continued investigations into the Cameron damsite on Sounding Creek near Youngstown.

Work continued on the surveys for the William Pearce Project and aerial surveys and ground control were carried out on the long line canal alternative through the Edmonton Office. The Calgary Office continued to investigate other possible areas which might be irrigated. Preliminary surveys were run to reach land between Sounding Creek and Grassy Island lakes. Time was also spent in collecting and assessing the value of the existing information on the various proposals for the project that have been made since the original survey by William Pearce.

The usual number of inspections and complaints were investigated during the season, the most notable being the number of water supply extensions and the legal aspects of acquiring right-of-way, etc. for these projects. Four major plants are in the process of, or have completed, building water supply projects or additions in the Calgary district, and all required assistance in meeting licensing requirements.

At the request of the Prairie Provinces Water Board a report on "The effect of a change in vegetation on the runoff characteristics of western streams" is being prepared and will be completed shortly.

During the late summer and fall this office, on direction from the Edmonton office, began taking over all the old files and plans that the Federal Government had retained when Water Resources was transferred to the province. To date some 2,200 rolls containing an estimated 9,000 plans have been acquired and classified.

In April an instrumentman was added to the Calgary staff and his assistance proved valuable in handling the increased volume of work in this area. Under his direction 100 miles of levels were run, the area on the east side of Pakowki Lake contoured and various small projects surveyed.

The volume of work originating from the local area has increased from 15 to 20 per cent during the year indicating that more people are becoming aware of the services offered by the Calgary Office.

An inspection was made of the projects that the P.F.R.A. wishes to turn over to the province and reports are under preparation as to the repairs necessary to make them acceptable to the province.

The P. F. R. A. small projects division has undergone an administrative change. The local offices at Hanna, Medicine Hat and Fort Macleod are now concentrating on small storage projects and dugouts. Larger projects are being controlled by a centrally located office in Calgary. All three district offices now come under the central office.

This year saw a marked increase in the request for assistance in dugouts and small reservoirs due to the lack of spring runoff and a dry summer period. This was especially true in the Hanna-Youngstown area where water supply became quite critical. The P.F.R.A. completed some 600 projects in 1959 including 90 stock watering dams and 17 irrigation projects, the remainder being dugouts.

Ducks Unlimited constructed eight new projects in co-operation with the province and each of these were inspected and approved.

During the 1959 season the Department of Highways at Calgary requested information on six projects and actual field investigations into three of these were made. The Fisheries Branch requested assistance in making inspections of two projects and for information on their problems. The Department of Health provided assistance in controlling the amount of silt returned to our streams from gravel washing plants and in water supply problems.

LETHBRIDGE DISTRICT OFFICE

In 1959 one hundred and forty-five inspections were made involving problems of erosion control, flood control, seepage losses, seepage damage, water supply, ice jams, water contamination, water rights, waste disposal, drainage, remedial work, etc.

For the St. Mary Milk River Project, seepage tests were conducted on 2.8 miles of distributary ditch near Purple Springs. In these tests weirs were used to measure the flow at points along the ditch in order to assess seepage losses between points. These tests were used to calibrate data taken by seepage meters so that these meters could be used with confidence for a more extensive testing program conducted by the drainage specialist of the Land Development Branch.

Some work was done for the Construction Engineer on the St. Mary and Milk Rivers Development and Bow River Development in designing modified precast concrete drops, special flumes, precast turnouts and culvert headwalls.

Watermaster service was again provided for water users on Pakowki Lake Tributary Basin and because of a complaint from Montana this service was extended to Sage Creek toward the end of the runoff season.

Although no further erosion control work was done along Milk River in 1959, some of the more critical areas were kept under observation with the hope that future remedial work can be made timely, effective and economical.

River works at Fort Macleod and at Woolford Provincial Park were inspected several times to assess the effectiveness of gabions installed in 1958. Additional work became necessary at Woolford Park because of insufficient gabion coverage. About 600 yards of gravel was hauled to repair the three groynes and 300 yards of rock was used to augment the gabion protection.

In the Crowsnest Pass area work was done in several steams to increase channel capacity, lower flood levels and to control erosion. The lower one thousand feet of Lyons Creek in Blairmore was dredged out and about nine hundred feet of bank was rip-rapped. Crowsnest River was dredged for a reach of three thousand feet in the west end of Blairmore. In East Coleman the lower six hundred feet of Nez Perce Creek was dredged and this reach is now being rip-rapped to protect the adjoining street. Rip-rap work was continued on Crowsnest River in both East and West Coleman so that all vulnerable reaches of bank are now protected in these two built up areas.

During the year, Glacier Creek was diverted into Island Lake to help maintain the water level there for the Fish and Wildlife Branch. Allyson Creek was also dredged for about six hundred feet above its mouth in Crowsnest River in order to consolidate the flow in one channel so fish could swim upstream to spawn during low water periods.

Possible storage sites on Crowsnest River were inspected and roughly appraised because of a need which may arise from industrial developments in this area.

Liaison was maintained with the P.F.R.A. Calgary Office in preliminary planning for storage sites on Willow Creek and in the progress of Antelope Coulee Project of The Eastern Irrigation District.

IRRIGATION

General

Numerous questions and problems regarding the application of the Irrigation District Act were attended during the year. Difficulties were encountered with townsite subdivisions which had long since been abandoned and are now agricultural land. These subdivisions were difficult to tax and it was impossible to classify the lands. Legal surveys and documents were prepared to consolidate these areas into parcels. The procedure to be followed when considering lands within villages, hamlets and towns, which are effected by irrigation, was clarified to the extent that it was possible to remove encumbrances and thereby make it possible for the local authority to properly handle these lands.

A number of legal surveys were made in order that a proper division of rates could be established, particularly where new roads had been built and the original right-of-way was widened. Such lands require reclassification. Legal surveys were made to permit the obtaining of land titles by various districts and surveys were made of rights-of-way required by the Crown. The purchase of land for canal right-of-way and works of the Crown and various districts was continued.

An access road was constructed to the upper Belly River weir to provide flexibility of making a division of the waters to the United Irrigation weir lower down the river. The division of the Belly River waters is now more readily handled and the safety of the canal and Driggs Lake reservoir are enhanced. The obtaining of water from the reservoir by the Aetna, Mountain View and Leavitt Districts, and the supply of water from the Belly River for the United Irrigation District, has thus been greatly improved. Access was also provided to the division gate between Aetna and Leavitt, as well as to the overflow, safety wasteway and head of Lee Creek syphon. The loss of the P.F.R.A. syphon some years ago can be attributed, in part, to the lack of this access. The original construction by the P.F.R.A. had envisioned such access when the project was brought up to capacity.

All earth work on the Belly River-Driggs Lake section was inspected and fall work was done on the sections of the main canal that showed weaknesses or where seepage was becoming a problem. The original enlargement of the canal by the P.F.R.A. necessitated lengthening culverts and supporting fills in a number of instances. This work had to be deferred until after the irrigation season but was not completed due to the heavy fall rains and early heavy snow.

Seepage damage claims were investigated during the year as well as damages resulting from overflow caused by ice and snow, and some settlements reached. Considerable damage to crops was caused by heavy fall snows which blocked canals before the water could be shut off or wasted and it consequently overflowed onto the adjacent land.

There were heavy demands for water in the early part of the season and an expansion of irrigation operations in the districts of Leavitt and Aetna. The committees for these districts had underestimated the demand and considerable construction had to be done with limited funds. The P.F.R.A. was advised of the need for an additional syphon to bring the Aetna District up to capacity and so provide for this expansion. There was also a heavy demand for water during the hay growing season in the United Irrigation District.

The program of replacing old inadequate bridges with new heavy bridges was continued. Heavy traffic, due to the Waterton River dam, still prevails and further work on bridges is required. The United Irrigation District canal at the damsite was re-routed by the P.F.R.A. during the fall. The impact of the Waterton River dam on the district resulted in complaints being received during the year.

Studies were made of the effects of a continued flow of water in canals constructed in light and heavy soils. Drainage problems were studied and measures taken to combat them. The matter of drainage is becoming more of a major problem particularly where heavy applications of water are made.

Tests made on the McLeod Irrigation Project were partially evaluated. There was an agreement of opinions between the district and the P.F.R.A. as to the technical difficulties of the project. The tests also confirmed that this project could not be operated until much more investigational work has been undertaken. Culverts, bridges and controls were the only structures maïntained and only work of absolute necessity was attended in order to conserve on expenditures.

A meeting was held with P.F.R.A. with regard to projects in which that organization had an interest, or had originally constructed the main works.

St. Mary and Milk Rivers Development

In making reference to the economic progresss of the Picture Butte area, the Lethbridge Herald recently stated that the past, present and future of this economic activity are bonded with one of the best balanced economies to be found anywhere in Canada. The strength behind this framework of the well balanced economy lies in a widely diversified agricultural front with irrigation as the backbone. Few, if any centers in Canada, can lay claim to the honor that slightly more than 98% of the farmers in the Picture Butte area own their land outright. This honor is further enhanced when we take into consideration the fact that irrigated land produces more and therefore cost more.

In what is referred to as a new wealth production survey in southern Alberta, it is reported that over the last thirty-two years this production amounts to $3,128,760,000 of which $187,975,000 was realized in 1959. This is perhaps significant when one considers that it was little more than fifty years ago that Alberta became a province. This 1959 figure of wealth production is an all time record and this is in an area where more than 75% of the economy is directly dependent on agriculture. A newly established industry in southern Alberta promises to enhance this picture still further. This is the sunflower industry which in 1959 produced 12,500,000 pounds of sunflower seed. This is the first time that the use of sunflower seed oil has been established on such a large commercial basis. The value of the sunflower crop produced this year is estimated at $6,820,000 which is comparable with that of the sugar beet industry.

During 1959 the canals of St. Mary Milk River Development carried a greater flow of water than in any previous year. This may be attributed in part to the quantity and distribution of the season's rainfall and in part to the fact that the development of lands for irrigation by the farmers is still continuing.

This year 190,189 acres were accessed for irrigation in the S.M.R.D. Of this number 113,210 acres were located in the eastern division. Water consumption for the year amounted to 188,210 acre feet of which 94,790 acre feet were used for the irrigation of 54,360 acres in the eastern division.

The volume of work related to drainage and the control of land damaging seepage has steadily increased over the past three years. The Government Committee on Seepage and Alkali, composed of representatives from the Irrigation District, Colonization, the Land Development Branch and the Water Resources Branch, are responsible for receiving, investigating, analyzing and recommending an economical solution to a growing volume of complaints arising from inadequate drainage or land rendered non-productive due to the development of alkali and water logging arising out of seepage. The Committee meets once a month, usually for a period of two full days, to consider the detailed reports of the investigations carried out by the various members of the Committee and to recommend appropriate remedial action. The destruction of agricultural land is a double threat to the development of an irrigation district. It not only renders a hardship on the landowner who relies on the produce of this land for a livelihood but it also results in a reduction of revenues to the district by way of water rate assessments. If allowed to continue over a period of time, these reductions can amount to a significant figure. If a district is to carry out efficient operation and maintenance, there is a limited minimum amount of money for which this can be done. If revenues fall below this limit, the remaining productive land will have to bear a heavier water rate assessment, or some alternative form of subsidy will be necessary to provide for the deficit. The Drainage Committee therefore feels that it has a very serious responsibility in effectively remedying existing problems as well as undertaking preventative measures to avoid the development of problems which, if left unattended, would require large expenditures to overcome.

In their efforts to seek information and knowledge relating to such problems, four members of the committee were granted permission in February of 1959 to make a tour of inspection of the irrigation works in the United States from Montana to the southern boundary of California. Although each member was generally interested in all aspects of irrigation, each had a particular interest in one or another of a limited phase of irrigation, so that administration, construction, operation and application was each represented in the group. An invaluable amount of information was gained through this tour, but perhaps the most successful aspect of the trip was that much of our own thinking and proposed ideas were found to be identical with those of the irrigators in the United States. Many of our ideas, about which we have been thinking and discussing for some time, have been put into effect south of the border and have been in operation for a period of time sufficient to prove that they are practical and sound.

One proposal in particular, which has for many years been given thought by those associated with irrigation in Alberta, is the matter of land classification and its relationship to the assessment of water rates. In October, 1959 ten representatives from the S.M.R.D. and B.R.D. and the Department of Agriculture held a meeting at which this matter was studied and discussed and a program of future action prepared. As a result, the present grades of land classification are being revised, all classification on the S.M.R.D. and B.R.D. are being brought up to date according to the latest common standard and arrangements have been made for a comprehensive economic survey of the S.M.R.D. and B.R.D. Irrigation Districts. It is hoped that a procedure of rate assessment can be developed and accepted by the farmers which is based primarily on the ability of land to produce or repay capital investment. Many of the irrigation districts in the western United States operate on a similar system and, in our opinion, such a system provides a much fairer basis by which farmers are assessed for irrigation facilities.

The majority of the work carried out by the Water Resources Branch on the S.M.R.D. during 1959 pertained to canal lining and drainage construction. Since the fall of 1958 approximately 1,202,000 square feet of six mil polythylene canal liner has been installed. This total includes approximately 316,000 square feet in the Taber area, 30,000 square feet in the Bow Island area and 674,000 square feet in the Medicine Hat area. Of this total 560,000 square feet was laid during 1959 over some 25,550 lineal feet of canal.

The main purpose of the lining is to eliminate seepage arising from the canals which causes water logging and salt accumulation on adjoining lands. This results in a considerable acreage of good agricultural land to be rendered non-productive. A secondary purpose of the lining is to reduce high water loss from the canals. This consideration may not be of major significance at the present but it is thought by the Drainage and Seepage Committee that, at some future date, the saving of water will become a very real consideration in the irrigation projects.

The original canals were constructed with 2:1 side slopes. In order to facilitate the laying of canal lining, it was necessary to redesign the canal sections to provide for 3:1 side slope. Canal banks were also originally constructed with a width equal to .6 times the canal bed width with a minimum of three feet. For lining operations, it was necessary to rebuild the canal banks to a width of approximately eight to ten feet to provide adequate working room for equipment.

The main canal lining projects undertaken this year were as follows:

Lateral "N" Medicine Hat	—24,500 lin. ft. of canal lined requiring 67,400 sq. ft of liner at total cost of $29,550.
Lateral "H" Taber	—140,000 sq. ft. of liner used to line 5,000 lin. ft. of ranal at a cost of $7,821.
Lateral "20B" Bow Island	—1,500 lin. ft of canal requiring use of 30,000 sq. ft, of lining material installed at a total cost of $1,735.
Lateral "K" Taber	—4,700 lin. ft of canal was lined using 93,500 sq. ft of plastic costing $7,029.50.
Lateral "H" Taber	—83,160 sq. ft. plastic was used to line 4,600 lin. ft. of canal at a cost of $5,323.
Lateral "20B" Seven Persons	—2,900 lin. ft. of canal lined requiring 63,800 sq. ft. of liner.
Lateral "3A" South Purple Springs	—2,500 feet of canal has been built up but due to the on-set of winter weather no lining has yet been placed.

On the projects listed above, the average cost of lining amounts to $1.32 per lineal foot or approximately .06 cents per square foot of lining. This cost includes all canal re-construction, the purchase and placing of the canal liner and the backfill and trimming operations.

In the construction of drainage works, ten miles of drains were built in 1959 varying in depth from three to sixteen feet. This work was undertaken with departmental and rented equipment. The deeper drains are constructed as intercepter drains to cutoff seepage from the main canals whereas the shallower drains are constructed through natural drainage courses to provide outlets to water collecting basins. In October a contract was awarded for the construction of ten miles of main trunk drain in the East Horsefly Drainage Basin. This drain has an average depth of about nine feet and at the present time is about forty per cent completed.

Other projects done on the S.M.R.D. during the year include continued enlargement of the northeast lateral to provide additional capacity to serve the Cameron Ranch distribution system, deepening of one lateral in the Big Bend area north of Taber and one near Bow Island to eliminate seepage, completing Forty Mile Coulee Spillway south of Bow Island, and the fabrication and installation of precast concrete structures throughout the district.

During the latter part of the summer, construction crews and equipment from the S.M.R.D. were called upon to build drainage and erosion control works at Cluny. This project required the installation of twelve precast concrete and rip-rap drop structures.

In addition, nine drains were constructed, an alteration of grade was made on the Taber-Fincastle Drain and lateral "K" of the Taber District was deepened for a distance of 5,150 feet thereby requiring the installation of two drop structures. Work was also carried out on the Kerner Lateral near Bow Island, the main canal for the North Coaldale area and Lateral "18B" in the Taber District. Other miscellaneous work included installation of sewer and water systems for the Chin ditchrider house, the extension of turnout pipes, the placing of rip-rap under the Raymond Chute, the priming and testing of the Cameron Ranch distribution system, construction of fences and the filling of borrow-pits throughout the project. The fabrication of precast concrete structures was continued at Grassy Lake headquarters for projects at Cluny, Grande Prairie, Forty Mile Spillway, Lateral "18B", North Purple Drain and the Brewin and East Horsefly Drain.

Bow River Development

Development and expansion of farm holdings in the Bow River Project was most noticeable in 1959. Many farmers in the area, who formerly looked on irrigation with some skepticism, can now be seen applying these facilities to a marked advantage. Some of the development is hampered at the present time because of the lack of adequate drainage, however, many farmers have formulated development plans to be put into effect once this drainage has been provided.

In 1959, 12,973 acres were accessed for irrigation. Those areas actually irrigated required a consumption of 10,957 acre feet of which 2,545 acre feet were used for the priming and testing of works on distributaries H, J and K. Water deliveries continued from March 29 until October 21.

The construction program on the Western Block of the Bow River for the fiscal year 1959-60 may be summarized as follows:

The Enchant drain contract was completed, as was the building of road approaches to the concrete bridges on this same drain. Included in this work was the completion of construction on several concrete drop structures, and the disposal and leveling of spoil banks along the drain. The latter was done with rented equipment and was not part of the actual drain contract.

Finishing work was done on the houses and buildings of the project. This consisted of installing a sewage disposal field and septic tank for the outlying houses, digging reservoirs and installing water lines, filters, chlorinators, pressure tanks and pressure pumps for water systems for all houses, including a larger system to handle the headquarters west of Enchant. Garages and sidewalks at all outlying houses were also built and additional landscapping done at the headquarters.

Arrangements were made with the P.F.R.A. to prepare the design layout and contracts for the lateral drains in distribution systems A, B, C and D. A small amount of work has been done on one of these drains by departmental equipment in order to facilitate combining road construction drainage and irrigation drainage into one canal. It is expected that the contract for construction of the remaining distributory drains A, B and C will be awarded in 1960.

Another aspect of the work consisted of outletting the ends of laterals and distribution systems into the Enchant drain and other proposed drains on the project. A good start was made on this phase of the work and it will continue during the coming year.

The remaining main part of the program saw the construction of a number of pile farm bridges across the Lamond Lateral and the Enchant drain for access purposes. The installation of several minor irrigation structures throughout the projects was also carried out. The last aspect of the work was the continuation of detailed topographic surveys of the project area to be filed in the Water Resources main office as part of the plans of the project and for use by operation and maintenance staff.

Report of the Colonization Manager

for the

ST. MARY AND MILK RIVERS DEVELOPMENT
BOW RIVER DEVELOPMENT

and the

LETHBRIDGE NORTHERN IRRIGATION DISTRICT

PROVINCE OF ALBERTA

C. J. McAndrews—St. Mary and Milk Rivers Colonization Manager
C. J. McAndrews—Bow River Development Colonization Manager
P. M. Sauder—Lethbridge Northern Colonization Manager
P. M. Sauder—New West Irrigation District Manager

By Order-in-Council 1857/58 dated December 22nd, 1958, C. J. McAndrews was appointed Colonization Manager for the St. Mary and Milk Rivers Development and the Bow River Development. The Irrigation Extension Service of the Extension Branch was transferred during the course of the year and amalgamated under the Colonization Branch as the Land Development Service. Appointment of the staff of the Land Development Service was made effective July 1st, 1959 as follows:

D. G. Harrington	—Supervisor of Land Development
L. D. M. Sadler	—Drainage Investigator
G. L. Steed	—Land Classification Specialist
N. S. Thomson	—District Irrigationist
R. H. Schuler	—District Irrigationist
V. B. Taylor	—District Irrigationist
S. Noreika	—Chief Technician
H. Thiessen	—Assistant Drainage Investigator
J. P. Redd	—Assistant Land Classification Specialist

Changes in the policy of the Colonization Branch were:

(1) The Government is prepared to grant title at the end of five years rather than ten years, to land purchasers if all payments on the land contract, water agreement and land levelling account are fully paid. A restrictive agreement will be registered against such lands for the remainder of the ten year period to prevent transfer or lease of the land except with prior approval of the Colonization Manager.

(2) The Government will approve settlers buying the lands of other settlers providing the purchaser is in a position to do so and providing the transaction receives the approval of the Colonization Manager and the Irrigation Council.

(3) The Government increased the present land levelling allotment from $2,000.00 per settler to a maximum of $3,200.00 per settler. It is understood that the Colonization Manager shall use every discretion in authorizing land levelling when costs exceed $2,000.00.

(4) The Government approves of the Colonization Manager assisting holders of large tracts of irrigable land to settle them, but that this program be undertaken incidental to other work.

The Honourable L. C. Halmrast, Minister of Agriculture appointed C. J. McAndrews as a member of the Irrigation Planning Board for the Alberta Government.

The Colonization Manager also served as Chairman of the Departmental Committee on Seepage, Alkali, and Drainage Problems for the St. Mary and Milk Rivers Development and the Bow River Development, the members being:

R. Bailey —Chief Engineer, Water Resources Branch
R. L. Francis —Construction Engineer, Water Resources Branch, and Manager Bow River Development
P. M. Sauder —Manager, St. Mary and Milk Rivers Development
J. H. Graham —Assistant Manager, St. Mary and Milk Rivers Development
L. D. M. Sadler —Drainage Investigator, Colonization Branch
C. J. McAndrews—Colonization Manager

ST. MARY AND MILK RIVERS DEVELOPMENT

The land sale allotments for the period 1951 to 1959 inclusive, number 76 parcels to veterans and 95 parcels to non-veterans. This is a decrease during 1959 of three veterans and an increase of seven non-veterans. There are twenty-five tentative allotments pending completion early in 1960.

Applications for land were accepted during the months of July, August and September, there being 68 applicants who were examined by the Colonization Manager and the Advisory Committee. 49 applicants were qualified for consideration for land allotments. No further applications will be received as the number of qualified applicants on hand, greatly exceed the parcels of land available.

Lands remaining unsettled total approximately 103 parcels. It is considered that 61 parcels are unsuitable for farm settlement due to rough topography, and it has been recommended that these lands be utilized as community pastures.

Nine land purchase agreements have been cancelled or quit-claimed during the year making a total of 17 since 1951.

The progress of the settlers is very difficult to evaluate. The majority of the settlers claim and show records indicating rather poor results. This however, is believed to be little different from the conditions of all farmers in the area. 45 settlers are one year in arrears on their land purchase agreements, 28 are two years in arrears, 18 are three years in arrears, 8 are four years in arrears, 4 are five years in arrears and 1 is six years in arrears. The total arrears is approximately $66,000.00.

114 parcels were leased during 1959, which is an increase of 4 from 1958. These lands include parcels that have been purchased due to damage from seepage, and which are being reclaimed.

Collections during 1959 were somewhat less than during 1958. An increase would have been shown except that a considerable amount of revenue from crops share claims was channelled to the St. Mary and Milk Rivers Development, (operation and maintenance) to pay water service charges which have priority over water right and land payments. Consequently land principal collections are less than in 1958. Water Right Collections however, have increased appreciably due to the increase in number of active accounts.

Water Right Agreements for the St. Mary and Milk Rivers Development total about 1,700, of which 1,458 are active, 161 are as yet inactive, and the balance paid in full, cancelled or temporarily deferred. These water rights are held by 1,082 farmers.

FARMERS IN ARREARS

Year	Number of Farmers	Amount of Arrears
In 1955	1	$ 117.00
In 1956	1	155.12
In 1957	30	3,575.14
In 1958	83	17,616.62
In 1959	109	21,015.35

The report of the Provincial Auditor for the year ended November 30th, 1959, will contain statements of advances made on behalf of the St. Mary and Milk Rivers Development and the assets and liabilities of the St. Mary and Milk Rivers Development Colonization Manager.

BOW RIVER DEVELOPMENT

Due to the number of applicants on hand, no further applications for land were accepted after October 31, 1959. 41 applicants were examined in 1959—37 of which were qualified. 20 allotments were made during the year, bringing the total up to 47 since 1957—5 to Veterans and 42 to Non-Veterans. A further 10 allotments are pending. In addition, there are the 17 allotments in the Hays Division. Originally, these parcels were all alloted to Veterans. One Veteran was cancelled out, and one quit-claimed. These two have been replaced by two Non-Veterans.

76 parcels of land were purchased in 1959. 145 parcels were leased in 1959 for grazing and cultivation purposes, an increase of 31 over 1958.

Lands remaining unsettled, total approximately 86 parcels. It is considered that 37 parcels are unsuitable for farm settlement due to rough topography and it has been recommended that these lands be utilized as community pastures.

11 settlers applied for and had Land Levelling work done on their land.

At the present time, 5 contract holders are 2 years in arrears on their payments, and 6 contract holders are 1 year in arrears. The total amount owing is $4,990.07.

The report of the Provincial Auditor for the year ended November 30th, 1959, will contain statements of advances made on behalf of the Bow River Development and the assets and liabilities of the Bow River Development Colonization Manager.

IRRIGATED LAND DEVELOPMENT SERVICE

The integration of the Land Development Service into the Colonization Branch is progressing and a more co-operative working relationship is developing. This will be improved even more when all groups are in the new office, presently under construction.

Land classification of the Bow River Development has been completed and the tracings are in the hands of the Manager. There are 25,608 acres suitable for irrigation as compared to 63,000 proposed. Land classification was also completed on the Cameron Ranch and Readymade Extension. Cameron Ranch—3,259 acres suitable for irrigation. Readymade Extension—1,300 acres suitable for irrigation. Land classification of the S.M.R.D. is being re-investigated, following the discussions of the October 8 and 9 meetings where the Land Classification standards, as submitted by the Land Development Service, were approved, subject to discussions and study with Mr. W. E. Bowser, Soil Survey, and Mr. Gordon Haase, Federal Economic Division, to establish ranges of economic land classes based on net return per acre of the main soil and topography ratings. This classification should be completed sometime in mid 1960.

The general trend of thought as regards classification by all those interested in irrigated lands, is very encouraging and promises a brighter future for classification acceptance.

The offices at Lethbridge, Taber, Bow Island, Medicine Hat, Brooks and Enchant spent more time on land levelling survey, design and advice for land levelling to farmers than before. The demand for this type of technical advice and planning of irrigation systems is increasing rapidly. This has been brought about by the awareness created by this Service, the District Agriculturists and the Experimental Farms, of the need for efficient irrigation.

The investigational work completed by the Drainage Investigator prior to construction of interceptor drains, main drains and canal lining and presentation to the Drainage Committee, has made it possible for the committee to make accurate recommendations. The construction of all drains and the lining of all laterals to date, has relieved the problem and stopped the spread of seepage water. The work carried on by the Drainage Investigator has shown that main drains should have been constructed at the same time as the delivery system, as it is much more difficult and expensive to reclaim than it is to provide adequate drainage and seepage control. Detailed investigational work should be done prior to the construction of any irrigation project and recommendations made as to the necessary lining and drainage to be installed during construction.

At the end of 1959 and the beginning of the 1960's, it is interesting to look back on approximately 10 years of operation and note some of the milestones in the development of the Extension Irrigation Service which has now become the Irrigated Land Development Service.

In 1951, the Extension Irrigationist started a land levelling programme on Colonization lands. This could be considered the first formal land levelling programme in which the Alberta Department of Agriculture participated. This was the start and was necessarily a programme of trial and error and consisted mostly of increasing the irrigable area. In 1954, Mr. Lloyd Young, a farmer and land leveller from the Rosemary District, joined the staff and introduced the trench method of saving topsoil. He also encouraged the practice of levelling larger areas to a more uniform grade that could be irrigated by border ditches or in a few cases, border dykes. During the winter of 1954-55, the staff studied the Parkingson method of land levelling design for border dykes after consultation and discussion with Mr. Egan Rapp, Resident Engineer, P.F.R.A., Vauxhall. This method was accepted and used to design border dyke systems. From this point, this Service designed all levelling jobs where practical. Design, survey techniques and follow-up services have been adjusted and improved with experience. This process is still progressing.

Since 1950, land classification of irrigable lands has progressed from a gravity survey, which designated all lands below the farm head ditch as irrigable, to a complete appraisal of all soil, topographic and economic conditions. The first big step was taken by the Alberta Department of Agriculture in 1956, when they accepted the land classification procedures submitted by the Extension Irrigationist as proposed for the irrigable lands under the proposed S.M.R.D. High-Line Canal. These investigations were submitted to the Government in the fall of 1957. On October the 8 and 9, 1959, the classification standards, as outlined in the High-Line report, were accepted by the Managers of the B.R.D. and the S.M.R.D., subject to a suitable range of economic land classes being worked out to apply to the main soil and topographic ratings. Re-classification of the S.M.R.D. is now in progress.

The introduction of the Irrigation Gauge to each main district in 1958 was the first formal step to supply irrigation farmers with accurate up-to-date evaporation-transpiration data, rainfall records and required amounts and time of irrigation. This programme was started after study and discussion with personnel at the Vauxhall sub-station. This information is also made available through local newspapers and radio.

The Committee formed to study drainage, seepage and alkali problems in 1957, worked co-operatively to recommend solutions through construction of drains, lining canals or purchase, for seepage and alkali problems caused by canals and laterals.

The Land Levelling Trust Account operated successfully during the 1959 season, although handicapped by a shorter than usual season. Units E, F, G, and H, earned a total revenue of $40,856.00 and had $32,936.00 expenses. (Expenses include wages of all personnel.) Formerly, one foreman was paid out of Vote 155 B. Revenue over expenses should be adequate to cover depreciation.

The demand for good land levelling equipment and operators is increasing. We were unable to complete our full schedule of work and all offices have a full schedule of land levelling jobs for the spring.

To sum up the annual report, it can be said that this was a year of success. The Irrigated Land Development Service has been accepted as an integral part of the irrigated economy of Southern Alberta by the farmer and by the administrators of irrigation projects. The methods of Land Classification have been accepted by both the Managers of the B.R.D. and the S.M.R.D. Drainage data supplied to the Drainage Committee is actually the foundation of that committee. The land levelling services supplied by this service were in demand. The moisture data supplied by the Irrigation Gauge has been accepted by other agencies and is gaining in usefulness to the farmer and the general public.

The one demand that is not being satisfied is the demand for development credit. Irrigated farmers have shown through our programme that they are willing to develop their farms to handle irrigation water efficiently but, they are unable to meet the costs on a cash basis. Some form of long term supervised credit is needed now.

LETHBRIDGE NORTHERN COLONIZATION MANAGER

As there was no additional land available for sale, no additional sale contracts were issued in 1959. The land and water right agreements issued since the Colonization Branch was started total 1,101. During 1959, four contracts were paid up, making a total of 1,096, or 99:5% paid in full. The owners of these lands will not have any more capital payments to make and will only have to pay the water service charge in future. Only 5 contracts are not paid in full.

Since 1954, financial assistance given by way of loans to water users has been limited to loans for beet labour and hauling. The total amount loaned in 1959 was $249,876.43 as compared with $284,718.04 in 1958 and $250,435.33 in 1957. The Secretary-Treasurer of the Lethbridge Northern Irrigation District now looks after the office work in connection with the loans and the district bears the total expense of this service. The money used to make the loans is borrowed from the Treasury Branch in Lethbridge. On this date (January 6, 1960) only $4,635.23 is still owing by a few beet growers.

Each year, some of the sugar beet workers have taken other employment inside and outside of the irrigation district and others become tenants and purchasers of land. While there was difficulty in obtaining sufficient workers, the situation was not as bad as in some former years. In 1959 the workers on the Lethbridge Northern Irrigation District were made up as follows:

Area Looked After in Acres	Percentage of Total	Source of Workers
433	3.6	Japanese
614	5.1	Pre-war Europeans and Miscellaneous
2,971	24.7	Growers own families
5,004	41.6	Post War Europeans who came to Canada prior to 1959
120	1.0	1959 Immigrants
2,887	24.0	Canadian Indians
Totals 12,029	100.0	

7,796 acres or 64.8% of the total area in sugar beets was harvested by machinery.

926 acres or 7.7% of the total area in sugar beets was thinned by machinery.

The following schedule gives statistics for sugar beet crops on the Lethbridge Northern Irrigation District for the years 1951 to 1959 inclusive:

Year	No. of Growers	Acres Harvested	Tons Harvested	Tons Per Acre	Sugar Content	Total Price Per Ton
1951	515	11,730	118,533	10.11	14.7%	$14.34
1952	514	13,148	165,299	12.57	17.3%	16.08
1953	510	12,516	144,641	11.56	17.3%	14.23
1954	514	13,184	152,869	11.60	15.7%	13.12
1955	511	12.988	146,390	11.27	17.7%	15.29
1956	491	12,545	151,551	12.08	17.2%	18.49
1957	481	12,788	157,798	12.34	14.9%	13.23
1958	487	13,132	195,606	14.89	16.0%	15.00†
1959	479	12,029	146,067	12.14	15.8%	*

†Expected to be this sum after the subsidy is paid.

*Total price will not be known until all sugar is sold.

Sugar beets is, of course, the main specialized irrigation crop on the Lethbridge Northern Irrigation District and has done more to help the water users to become successful farmers than any other crop. Other crops such as potatoes, peas, turnips, carrots, cabbage, beans, parsnips, strawberries, cucumbers, corn, mustard, gladioli, sunflowers and flax are also grown but we have no definite reports on these.

Feeding and marketing of livestock has also for some time been an important and profitable branch of farming in the Lethbridge Northern Irrigation District. Individual farmers on the Lethbridge Northern Irrigation District are feeding about the same number of cattle this year as in recent years.

The report of the Provincial Auditor for the year ended November 30th, 1959, will contain statements of advances made by the Province of Alberta on behalf of the Lethbridge Northern Irrigation District and the Assets and Liabilities of the Lethbridge Northern Colonization Manager.

THE NEW WEST IRRIGATION DISTRICT MANAGER

In the spring of 1952, the irrigation works belonging to the New West Irrigation District were transferred to the Minister of Agriculture of Canada. The water users now receive water from the Prairie Farm Rehabilitation Administration at the same price as the water users in the old Canada Land and Irrigation Company tract. Most of the lands are privately owned by the persons who farm them. All land contracts have now been paid in full and this irrigation district has ceased to function.

IRRIGATED LAND DEVELOPMENT SERVICE

Purple Springs Irrigated Community Pasture

Operation of this pasture continued with success this year. Two complete irrigations and two complete fertilizations on 400 acres were accomplished along with routine management.

Artificial insemination was used this year. A total of 160 cows was serviced with about a 55% conception rate. This could be considered favourable for the first year's operation.

A total of 580 head was carried for 5½ months. Of this amount 460 were paying head, the remainder being young stock under six months at date of entry to the pasture.

The grass held up well in spite of the cool weather in the fall, however, next year a program of reseeding will have to be introduced in order that the carrying capacity can be maintained.

IRRIGATED LAND DEVELOPMENT SERVICE

Lethbridge, Alberta

Land Development

These services are provided, upon the request of the farmer, to faciliate more efficient methods of irrigation and greater net returns per acre. Land classification and drainage data are supplied to administrative authorities and farmers so that more accurate land dvelopment and conservation decisions can be made.

I—**LAND LEVELLING SERVICES:**

Many improvements are required in the methods of handling water and its application. The following assistance is provided to farmers in an attempt to accomplish this improvement.

(A) **Farm Visits re:**

(1) L.L. estimates	260
(2) Inspections—Construction	477
(3) Follow-up—Recommendations	151
(4) Old Farm Visits	866
(5) New Farm Visits	211

(B) **Land Levelling:**

The services provided for land levelling include—surveying, designing, supervision, and survey checking of the jobs in operation and the providing of equipment to do a part of the total number of land levelling jobs in the new development areas.

(1) Number of parcels gridded	164
(2) Total acreage gridded	8,004
(3) Number of parcels land levelled	128
Total acreage land levelled	2,854
Detailed levelling	2,684
Spot levelling	170
Cost per acre improved (Detailed)	$40.00 (more or less)
Cost per acre improved (Spot Levelling)	$18.00 (more or less)

(4) Applications for L.L. Services in 1960 (No. of Parcels)	44
Approximate acreage as per application	1,821
(5) Office and field work for land levelling purposes (Man Days):	
(a) Total office work	1,774
(b) Total field work	2,976
(6) Alberta Dept. of Agriculture Equipment:	
Number of land levelling jobs worked	35
Acreage land levelled	827
Cost per acre	$44.00 (more or less)
Number of miscellaneous jobs which include dugouts, farmstead, trimming, grading, and etc., wherein, an area is not improved for farming purposes	32
Total revenue from all jobs (approximate)	$40,856.15
Total expenses (approximate)	$32,936.00
(7) Private Equipment:	
Number of land levelling jobs worked	92
Acreage land levelled	2.027
Cost per acre	$36.00 (more or less)
Number of miscellaneous jobs which include dugouts, farmstead, trimming, grading, and etc., wherein, an area is not improved for farming purposes	64
Total revenue from all jobs (approximate)	$84,025.45
(8) Total accumulative number of jobs since 1950 by Government Machines and Private Operator's Machines (not including miscellaneous)	640
Total accumulative area of acres improved since 1950 by:	
(a) Government equipment	14,561
(b) Private equipment	24,551
(c) Total	39,112

II—COMMUNITY PASTURE DEVELOPMENT:

The District Irrigationist has provided supervisory services to the irrigated community pasture as described elsewhere in this report.

III—LAND CLASSIFICATION:

Our services in providing land classification includes investigations of parcels of land by the methods outlined in the Land Development Classification Procedures.

(1) Number of field inspections	907
(2) Number of quarter sections classified	1,267
(3) Total estimated irrigable acreage classified	95,000
(4) Number of soil borings made by Sterling Drill	661
(5) Number of soil borings made by hand auger	250
(6) Number of field analysis for soil permeability	21
(7) Physical soil tests (infiltration, and specific gravity)	112
(8) Number of samples submitted to laboratory to be analyzed	911

IV—IRRIGATION ACREAGE CLASSIFICATION:

Our service provides an approved land classification plan showing: total irrigable and non-irrigable acreage, soil types, topography location of canals, laterals, and farm head ditches and other mapable information. These plans are submitted to: Manager of S.M.R.D. and B.R.D., farmers, District Agriculturists, and the Veterans' Land Act.

(1) Number of classification surveys:	
(a) Ditched	190
(b) Mapped	186
(2) Number of tracings completed	201 (¼ sections)
(3) Total irrigable acreage as per tracings	23,500
(4) Carry-over of classification surveys in 1960—Number of parcels	300
(5) Estimated irrigable acreage of carry-over	16,000
(6) Total number of maps, plans, reports, etc., issued to administrative agencies and farmers as a result of our services	3,302
(7) Total number of bulletins and newsletters issued	318

V—AERIAL PHOTOGRAPHY:

The use of aerial photography is used to replace the mapping on the land of the irrigable acres as separated from the non-irrigable areas and part of the drafting involved in completing the irrigation acreage classification. This work is done by contract with an aerial photography firm who photograph the land after we have completed the survey of ditches. The firm then plots the ditch line from the aerial photograph onto an ozalid of the scale 1″ = 400′. We then receive the ozalids and complete the drafting and classification of the irrigable acreage.

(1) Number of parcels photographed for acreage classification and soil and topograghy interpretation data	Nil
(2) Total estimated irrigable acreages of area photographed	Nil
(3) Number of ozalids completed	218
(4) Total irrigable acreage as per ozalids	11,573

VI—DRAINAGE INVESTIGATIONS:

An investigation for drainage includes the logging of soil profiles to a depth of 15′ by use of the Sterling Drill, the installation of piezometers and water table wells for recording hydrostatic pressure, water table levels and permeability testing. The analysis of soil samples for salts, salinity and alkali, the survey of test locations and the drafting, plotting, reporting, and interpretation of field data into a final report.

(1) Number of projects completed	24
Estimated acreage of area	17,145
(2) Carry-over to 1960—Number of projects	55
Estimated acreage of area	1,500
(3) Number of plans drafted	32
(4) Man Days spent on surveys	236
(5) Number of samples submitted in laboratory to be analyzed	2,279
(6) Number of field analysis for soil permeability	735
(7) Number of soil borings made by Sterling Drill including dugout tests	1,355
(8) The number of installations for soil drainage studies	325
(9) Number of readings of above installations	4,461

VI—A—LAND DEVELOPMENT SERVICE LABORATORY:

(a) **Soil Analysis:**

(1) Total number of samples received	3,510
(2) Number of samples analyzed in laboratory	2,907
(3) Number of tests (for pH, EC, Sat. %, Na, Ca + Mg, Chlorides, and Sulphates)	14,180
(4) Number of soil moisture tests	886
(5) Number of above samples taken to the University of Alberta for further analysis	700
(6) Number of tests (Ca + Mg, Na)	2,320
(7) Number of laboratory tests for Electrical reclamation studies	150

(b) **Water Analysis** (for total salts):

(1) Number of samples	540
(2) Number of tests	2,646

VII—MISCELLANEOUS INSPECTIONS:

The following inspections, made by the Technical Staff, resulted from day to day work routines and requests for consultation on Colonization, farm irrigation systems, pump irrigation systems, drainage, farm planning, survey procedures, drafting, and equipment. These inspections are of a detailed type and do not include the passing observations made of land plans and procedures.

(1) Number of field inspections	603
(a) Old Farm Visits	178
(b) New Farms Visits	425
(2) Number of office inspections	1,279

VIII—MISCELLANEOUS SURVEYS:

Types of surveys made such as head ditches, field ditches, drain courses, seepage areas, chaining boundaries, dugouts, etc.

(1) Total number of surveys	199
(2) The approximate total time requirement (Man Days)	357

IX—MISCELLANEOUS DRAFTING:

Types such as plotting, general plans, miscellaneous planimeter work, plotting R/W's, checking soil lines, borders, signs, posters, and etc.

(1) Total number of miscellaneous drafting jobs	602
(2) The approximate total time requirement (Man Days)	484

X—REPORTS:

(1) Number of all major reports of all kinds regarding all the various services performed	143

XI—MEETINGS, FIELD DAYS, DEMONSTRATIONS, SHORT COURSES:

(1) Number of extension prgorammes participated in by giving talks or demonstrations—Total Attendance	18—732
(2) School of Agriculture Short Course, Olds, Alberta—Number of lectures—Attendance	7— 63
(3) Number of all other types of meetings, etc.—Attended	114

XII—MISCELLANEOUS:

(1) Number of office interviews	1,174
(2) Study of related literature (Man Days)	115
(3) Number of telephone calls: (Long distance calls only)	1,485
(4) Number of letters and memos written	4,295
(5) Inventory, purchase of supplies, progress reports, work orders, (Man Days)	578
(6) Number of newspaper, radio releases	170

Report of Agricultural Extension Branch

STAFF

HEADQUARTERS

S. S. GRAHAM, Director
L. W. Rasmusson, Supervisor of District Agriculturists
R. E. English, Department Agricultural Statistician
Mrs. V. G. Macdonald, Supervisor, Home Economics Division
*Mrs. J. Vanterpool, Clothing Specialist
Miss Shirley Wood, Home Designing Specialist
C. A. Cheshire, Extension Engineer
J. L. Reid, Assistant Extension Engineer
T. A. Petersen, Farm Management Specialist
C. H. Ferries, Farm Management Specialist
G. E. Ackerman, Agricultural Economist

DISTRICT OFFICES

Office	**Agriculturist**	**Home Economist**
Athabasca	G. L. Gobel	
Assistant	G. R. McNaughton	
Barrhead	C. C. Robinson	
Berwyn	J. T. Lancaster	To be appointed
Bonnyville	L. Gareau	
Brooks	I. Lapp	Mrs. N. Gray
Assistant	M. F. Wilde	
Calgary	A. W. Beattie	Miss A. Randle
Assistant	K. Sveinson	Miss Z. Barteaux
Camrose	L. D. Williams	Miss P. Nichols
Assistant	C. Roth	
Cardston	D. L. Steed	
Claresholm	J. D. Jantzie	Miss I. Reid
Coronation	To be appointed	
Drumheller	S. W. Pettem	
Edmonton North	J. M. Fontaine	Miss M. Rae
Edmonton South	P. Jamieson	Miss M. Inglis
Grande Prairie	L. T. Jones	Miss L. Roach
Hanna	D. R. Macpherson	
High Prairie	M. H. Jaque	
High River	C. E. Yauch	
Lac La Biche	S. C. Powers	
Lacombe	W. L. McNary	Miss M. Cooper
Assistant	W. Dietz	
Lamont	G. W. Shewchuk	
Leduc	J. R. Gylander	
Lethbridge	R. M. Trimmer	Miss E. Bartman
Assistant	L. Welsh	
Mayerthorpe	H. B. Jeffery	
Medicine Hat	J. L. Anderson	
Assistant	M. A. Cameron	
Olds	H. J. Fulcher	Miss A. Schelstraete
Assistant	A. F. Belyea	
Ponoka	J. L. Kerns	
Red Deer	R. D. Price	Miss A. Nelson
Assistant	L. Bauer	
Rocky Mountain House	G. A. Ross	
Ryley	N. A. Chomik	
Sedgewick	A. E. Edwards	
Smoky Lake	F. Strashok	
Spirit River	F. Graves	
Stettler	E. W. Walker	Mrs. H. Moore
Stony Plain	R. C. Bocking	
Strathmore	K. H. Walker	
St. Paul	M. Chevrette	Miss E. Zawadiuk
Assistant	J. E. Taschereau	
Taber	A. R. Jones	
Assistant	J. G. Calpas	
Two Hills	Wm. Dent	Mrs. E. Durie
Vegreville	Wm. Pidruchney**	Miss P. Mascaluk
Vermilion	H. M. Douglas	
Assistant	E. Dobko	
Wainwright	J. S. Duncan	Miss N. Hooper
Westlock	W. A. Ross	Mrs. B. McCutcheon
Wetaskiwin	W. C. Proctor	Miss E. Dumont
At large		Mrs. B. Hucal
On Sick Leave		Miss H. Howard

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*Resigned December 11, 1959.
**Deceased—November 23, 1959.

Irrigation Division

Transferred to the Colonization and Irrigated Land Development Branch.

APPOINTMENTS

Headquarters

C. H. Ferries	Farm Management Specialist
G. E. Ackerman	Agricultural Economist
Miss Shirley Wood	Home Designing Specialist

District Agriculturists

C. Roth	Assistant at Camrose
W. Dietz	Assistant at Lacombe
L. Welsh	Assistant at Lethbridge
A. F. Belyea	Assistant at Olds
L. Bauer	Assistant at Red Deer
J. E. Taschereau	Assistant at St. Paul
E. Dobko	Assistant at Vermilion

District Home Economists

Miss Z. Barteaux	Calgary—(at large and Hanna)
Miss P. Nichols	Camrose
Miss M. Rae	Edmonton
Miss M. Cooper	Lacombe
Miss A. Schelstraete	Olds
Mrs. E. Durie	Two Hills
Mrs. B. McCutcheon	Westlock

PROMOTIONS AND TRANSFERS

Headquarters

S. S. Graham	Assistant Director to Director of Extension

District Agriculturists

J. T. Lancaster	Assistant at Berwyn to District Agriculturist at Berwyn
A. W. Beattie	District Agriculturist at Berwyn to District Agriculturist at Calgary
J. D. Jantzie	District Agriculturist at Coronation to District Agriculturist at Claresholm
L. T. Jones	Assistant at Red Deer to District Agriculturist at Grande Prairie
M. H. Jaque	Assistant at Grande Prairie to District Agriculturist at High Prairie
R. M. Trimmer	Assistant at Letrbridge to District Agriculturist at Claresholm
R. M. Trimmer	District Agriculturist at Claresholm to District Agriculturist at Lethbridge
F. Graves	Assistant at Camrose to District Agriculturist at Spirit River
Wm. Dent	Assistant at Lacombe to District Agriculturist at Two Hills
H. M. Douglas	Assistant at Vermilion to District Agriculturist at Vermilion
R. A. Moffat	District Agriculturist at Grande Prairie to Farm Credit Administrator

District Home Economists

Miss N. Hooper	District Home Economist at Camrose to District Home Economist at Wainwright
Mrs. D. Westendorf	District Home Economist at Lamont to District Home Economist at Edmonton

RESIGNATIONS

Headquarters

Mrs. A. Speers	Home Designing Specialist, Edmonton

District Agriculturists

A. E. Sherman	Lethbridge
A. B. Letts	Two Hills
E. C. Lowe	Spirit River
W. C. Yule	Claresholm

Assistant District Agriculturist

R. R. Marquardt	Spirit River

District Home Economists

Miss J. Krupa	Edmonton
Miss E. Witney	Westlock
Mrs. M. Dent	Lacombe
Mrs. B. Graumann	Hanna

RETIREMENTS

Headquarters

F. H. Newcombe	Director of Extension Branch

District Agriculturists

N. F. Bell	Calgary
E. H. Buckingham	Vermilion

DECEASED

W. N. Pidruchney	District Agriculturist at Vegreville

UNDERGRADUATE SUMMER STAFF

District Agriculturist

S. D. Fraser	Summer Assistant at Ponoka

District Home Economists

Miss A. Gordon	Calgary and Grande Prairie
Miss B. Cunningham	Edmonton
Miss B. McCoubrey	Hanna
Miss D. Evans	Lacombe
Miss N. Semotiuk	Vegreville

SUMMER ASSISTANTS

District Home Economists

Miss G. Daley	Olds School of Agriculture
Miss K. Carney	Olds School of Agriculture
Mrs. L. Johnson	Vermilion School of Agriculture

AGRICULTURAL SOCIETIES

A number of Agricultural Societies have taken advantage of the increased grants made available by the Department for Fairs and other activities. Grants may also be claimed by a properly organized Agricultural Society for any three of the following: Seed Fair, Poultry Show, Bench Show, Tillage Competitions, Farm and Home, Livestock Show and Sale, 4-H Competitions (Thematic Display).

Grants may be earned for Fairs or other approved activities on the following basis:

	Maximum Grant	
Basis 50% of amount paid in prizes:	Class "C" Fairs	Class "B" Fairs
Up to and including 1948	$3,000	$3,000
1949	400	1,500
1954	500	1,800
1956	600	2,000
Basis 75% of amount paid in prizes:		
1958 and 1959	1,200	3,000
Capital Grant—basis 66-2/3% of approved capital expenditures	....	1,000

Approved activities other than fairs on the basis of 50% of the amount paid in prizes or expenses necessary to conducting the activities, with a maximum grant of $125.00.

The Following Societies held fairs in 1959:

Class "B"—

- Camrose
- Lethbridge
- Lloydminister
- Red Deer
- Vegreville
- Vermilion

Class "C"—

- Athabasca
- Barrhead
- Battle River
- Benalto
- Cardston
- Darwell
- Donnelly-Falther-Girouxville
- Goose Creek
- Grand Centre
- Grande Prairie
- High Prairie
- Medicine Hat
- Olds
- Pincher Creek
- Priddis-Millarville
- Vauxhall
- Westlock
- Wetaskiwin
- Wildwood
- Willingdon

Others that held Fairs—

- Mayerthorpe
- Rimbey

Societies not Holding Fairs:

- Alix
- Argyle
- Fairview
- High River

Central Alberta
Drumheller
Edmonton and District
Okotoks
Plamondon
Rocky Mountain House
Lamont
Lousana
Nanton
Spirit River
Stettler
St. Paul

Activities other than fairs in which Societies concerned themselves are shown hereunder:

Tillage Competitions	4
Livestock Sales	30
Seed Fairs	6
Horticultural Exhibitions	6
Farm and Home Improvement Programs	6
Junior Club Display Competitions	15
Short Courses and Schools	26
Other	31

FARM LABOUR

General

The farm labour situation remained unchanged from a year ago. Mechanization remained an important factor but the profit margin to Alberta farmers precluded the purchase of farm machinery.

Whereas at one time perhaps the largest number of placements was in the field of general farm workers, this is now greatly reduced and the principal effort of the Farm Labour Committee was with respect to sugar beet workers.

Seasonal Movements

(a) **Ontario Farm Workers**

This movement was discontinued by its own inertia. Warrants were made available to field staff but no workers offered themselves.

(b) **Prairie Farm Workers**

For the second year this movement was not operative to Alberta. The decision to not provide assistance was based on a diminishing need for additional workers at harvest time. Had workers been requested, an embarassing situation would have resulted. Owing to bad weather, harvesting did not get into full swing at any time, thus a need for extra workers did not develop.

(c) **Alberta Harvesters**

Placements of these increased appreciably in the absence of prairie farm workers.

(d) **Sugar Beet Workers—Indians**

Recruitment was affected by local officers of National Employment Service in Saskatchewan and Alberta assisted by representatives of the Sugar Beet Growers and Sugar Factories.

Chartered buses were used extensively this year. This form of transportation facilitated handling at Lethbridge and reduced the cost appreciably.

Workers arrived in good time and no difficulty in placement was experienced. The movement closed June 12 though a small additional number could have been placed after that date. This year work was available in other row crops. Mechanical harvesting has taken the place of hand work to the extent of about 95%.

An estimated average of two meals per worker and dependant were provided at the hostel which was engaged by the committee.

Medical and hospital accounts in the aggregate for these workers continue to be a matter of some concern to the Farm Labour Committee though independently they average only $5.00 per head. Serially numbered cards issued to workers this year have assisted appreciably in identification of the workers for accounting purposes.

Custom Combines from U.S.A.

Permits were issued to 17 combines for custom harvesting in Alberta from U.S.A.

LABOUR STATISTICS

	1958	1959
General Farm Labour including married couples	1,061	1,073
Seasonal Movements:		
Alberta Harvesters	427	112
Sugar Beet Workers—Indians	976	1,061
Investigations and Tranfers	....	41
Custom Combines from U.S.A.	16	17

MASTER FARM FAMILY PROGRAM

Thirteen farm families were nominated under this program in 1959. Of these, the following were declared as Master Farm Families:

The George Cowling Family, High River
The A. M. Robertson Family, Carstairs

This brings to forty-one the total number of farm families which have been declared under this program 1949 to 1959 inclusive.

NAMES OF HOMES ACT

With 35 registrations this year, and 22 being relinquished, the total number of names of homes now registered under this Act is 337.

FARM WATER SUPPLY ASSISTANCE POLICY

Number of dugouts subsidized this year	154
Total 1945 to date	2,736

The number of applications for assistance for the construction of dugouts increased during 1959. We are continuing to receive representation from farmers, for dugout construction, in areas other than the Peace River area. No decision was made in this respect.

PUBLICATIONS

Noteworthy among the many publications in 1959 is the Alberta Farm Guide. Thirty thousand copies were printed and fourteen thousand distributed in November and December, 1959. This publication was a year in preparation and was designed as a reliable and up-to-date reference and guide for farm practises in Alberta. The editorial committee comprised representatives from the Alberta Department of Agriculture, the Canada Department of Agriculture and the University of Alberta. The outstanding authorities available were selected from the above research and experimental organizations as editorial committees for each section. The immediate acceptance of this publication by the farm people of Alberta justified the large amount of work required by the committees and the editors.

During the year the following numbers of agricultural and homemaking publications were distributed to the public:

Agriculture	199,400
Homemaking	67,850
TOTAL	267,250
Printed or reprinted during the year	47

VISUAL AIDS

This Branch owns and maintains the following items of equipment for use of the Department and their work with the public.

Motion Picture Projectors	9
Slide Projectors	45
Films owned	54
Films on loan	87

A total of 569 films were shown at 329 meetings to a total audience of 15,947 persons.

DISTRICT AGRICULTURISTS AND DISTRICT HOME ECONOMISTS

The District Agriculturist and the District Home Economist had the responsibility of maintaining a close liaison with the farm families on the land and the sources of reliable information including the Alberta Department of Agriculture, the Faculty of Agriculture at the University of Alberta and the Canada Department of Agriculture. They taught in an informal way, farm families to help themselves to acquire the necessary information and skills to provide a more satisfactory living. This teaching was through farm contacts, office interviews, letters, meetings, short courses, discussion groups, field days and farm tours.

The District Agriculturist and the District Home Economist were backed by specialists at headquarters in our own Department who are responsible for designing and developing agricultural policies. These specialists helped supply the field workers with information and the details required to do a more adequate job. The work of the field staff both supported and complimented the headquarters staff at Edmonotn.

FIELD CROPS

Demonstrations were used extensively. More grain, forage, soil and weed demonstrations were conducted this year than in the previous year. Many of these were carried out in cooperation with local Agricultural Service Boards of which the District Agriculturist was the Departmental representative. Some of the more important problems dealt with included soil erosion, control of troublesome annual and perennial weeds, seed cleaning, grain drying, suitable grasses for pastures, hay and silage, crop rotations, community pastures, control of crop pests and diseases, control of animal pests, tree planting, farmstead planning and grain dryers. While much was done, many of these problems require continued intensive efforts. Annual weeds such as Tartary Buckwheat and perennials such as Canada Thistle, Sow Thistle, Toad Flax, Leafy Spurge and Hoary Cress were serious problems in many areas. Sweet Clover weevil was a threat to the establishment of legume stands in many areas. Other troublesome crop pests were cutworms and grasshoppers. Pocket gophers were serious pests in hay and pasture fields. District Agriculturists were alert to the threat of an invasion of Norway rats and did much to help hold these rats to the eastern border of the province. More interest in the control of warbles and lice on cattle was evident, especially since the introduction of the new systemic sprays. District Agriculturists helped in the organization and establishment of cooperative enterprises such as seed cleaning plants, community pastures and warble spraying associations. During the past year District Agriculturists did much to counteract the high pressure sales and advertising campaign of an organization which endeavoured to oversell sorghum almum. This crop has not proven satisfactory for this province and was not recommended in any part of Alberta. Coyote control was not as intensive in 1959. In some areas it subsided considerably to counteract the necessity of controlling mice which were a threat to unharvested grain crops.

A summary of these activities include:

1. **CROP IMPROVEMENT**

A. **Grain**

Farmers participating in special projects	68
Meetings, demonstrations, field days, short courses, tours	83
Attendance	3,992
Registered seed—bushels instrumental in distributing	36,903
Commercial seed—bushels instrumental in distributing	221,993
Persons otherwise assisted	3,062

B. **Forage**

Farmers participating in special projects	528
Meetings, demonstrations, field days, short courses, tours, etc.	153
Attendance	2,796
Persons otherwise assisted	5,074

C. **Seed Processing**

Municipal plants assisted	37
Organizations, meetings attended	54
Directors meetings attended	201
Seed cleaning plants inspected	81
Seed drill survey samples submitted	845
Persons otherwise assisted	1,971

2. **SOIL CONSERVATION**

Special projects	166
Farmers participating	233
Demonstration fields	307
Seen by	2,345
Pounds of forage seed distributed	37,238
Meetings, short courses, field days, tours, etc.	58
Attendance	2,254
Soil samples forwarded for analysis	1,445
Persons otherwise assisted	2,666

3. **WEED CONTROL**

Weed specimens identified	920
Weed specimens submitted for identification	311
Demonstrations	191
Seen by	2,617
Pounds of forage seed distributed	35,595
Meetings, short courses, field days, tours, etc.	95
Attendance	3,590
Persons otherwise assisted	3,456

4. **CROP PESTS AND DISEASES**

Meetings, short courses, demonstrations, field days, etc.	49
Attendance	1,575
Specimens forwarded for identification	337
Persons otherwise assisted	2,565

5. **ANIMAL PEST CONTROL**

Farmers participating in coyote control	3,030
Coyotes killed	15,616
Estimated value of livestock saved	$140,000
Farmers influenced to control warbles, lice, ticks, keds, etc.	3,740
Demonstrations, meetings, short courses, etc.	74
Attendance	2,382
Specimens forwared for identification	32
Persons otherwise assisted	2,089

6. **AGRICULTURAL SERVICE BOARDS**

Meetings attended	356
Farms assisted under supervision	301
Farms assisted under reclamation	29
Features—projects, tours, field days (not reported elsewhere)	107
Persons otherwise assisted	227

7. **HORTICULTURE**

Meetings, demonstrations, etc.	78
Attendance	2,491
Farmstead plans assisted	555
Shetlerbelt plans assisted	1,316
Trees planted	1,735,200
Demonstration and farm orchards assisted	101
Persons otherwise assisted	3,813

8. **BEEKEEPING**

Meetings and short courses	8
Attendance	255
Persons otherwise assisted	298

LIVESTOCK

The Livestock Branch administered the regulatory aspects of this work and provided specialist services. Extension activities and some of the field duties pertaining to this work were carried out by District Agriculturists.

Work with livestock included information and advice in livestock placements, artificial insemination, herd and flock selection, registration of animals, brands, dehorning, feed analysis, livestock marketing, bangs vaccination, TB testing, livestock nutrition and diseases, specimens for diagnosis, swine quality improvement and performance testing of cattle.

Nineteen new Brucellosis areas were actively promoted by District Agriculturists covering 450,000 cattle. District Agriculturists played a major role in livestock disease prevention. Recommendations made for better nutrition and advice on husbandry management aided in controlling and reducing the annual toll of livestock losses. Numerous enquiries regarding livestock diseases were directed to others qualified to help. These included veterinarians, laboratory services and other specialists. Livestock diseases included those of a nutritional, parasitic, bacterial, chemical and virus nature.

Interest in quality livestock production was indicated by participation in hog quality surveys and competitions, artificial insemination and performance testing of cattle.

A summary of Extension Livestock work includes:

1. **Livestock Improvement**

Special projects	57
Farmers participating	5,995
Livestock affected	41,658
Demonstrations, meetings, short courses, tours	151
Attendance	7,293
Herds or flocks selected or culled	427
Feed samples forwarded for analysis	378
Farmers assisted with pedigree registration	1,269
Farmers using Departmental dehorners	1,555
Breeders using Departmental tatoo machines	329
Livestock placement (male and female):	
Horses	29
Cattle	2,491
Sheep	2,261
Swine	1,147
Poultry	318
Persons otherwise assisted	8,089

2. **Livestock Marketing**

Public sales assisted (excluding Calgary and Edmonton):	
(a) Organization	27
(b) Operation	47
Persons otherwise assisted	1,284

3. **Veterinary and Livestock Disease Control**

New brucellosis areas actively promoted	19
Farmers participating in Bangs vaccination	45,953
Specimens submitted on D.A.s suggestions	711
Enquiries regarding diseases	3,662
Farms receiving recommendations re improved nutrition	1,345
Farms receiving recommendations re improved husbandry management	1,318
Meetings, short courses, etc.	94
Attendance	4,326
Persons otherwise assisted	2,286

POULTRY

Much of the poultry work in Alberta was referred directly to the local poultry inspector, of the Provincial Department of Agriculture. District Agriculturists attended 18 meetings on poultry with attendance of 555. The main topics at these meetings dealt with building construction and ventilation. 943 other persons were assisted by District Agriculturists with poultry problems. Poultry enterprises were considered along with others in the farm management section reported under that topic.

DAIRYING

Increased interest in dairying was reflected by the extension work in various districts. More meetings and demonstrations were held. Topics included use of artificial insemination, loose housing, milking parlors, silage quality production and record keeping.

Special dairy projects for improved handling of dairy cattle and dairy products	20
Meetings, demonstrations, field days	103
Attendance	4,694
Farmers influenced re dairy cattle testing	220
Dairy herds culled or selected	64
Persons otherwise assisted	1,552

4H CLUBS AND JUNIOR ACTIVITIES

District Agriculturists are responsible for the organization and supervision of the Agricultural 4H Clubs in their districts. General assistance in 4H work was given by specialists and summer staff with leaders' courses, judging competitions, rallies and efficiency weeks. The administration of the overall 4H Club activities, 4H specialists and summer staff was provided by the 4H section of the Junior Activities Branch. District Agriculturists played an active role in discovering and training qualified local leaders to help carry out 4H Club work. The following is a summary of Junior activities in which District Agriculturists were actively engaged:

4H functions attended by D.A.s	1,661
Attendance at above	67,032
4H Club Farm and Home visits by District Agriculturists	3,808
Talks and Demonstrations by District Agriculturists at 4H functions	1,287
Other Junior activities assisted	941
Attendance	4,395
Persons otherwise assisted	1,600

District Agriculturists frequently assisted with school career talks and discussed educational opportunities in Agriculture with parents and children.

FARM MANAGEMENT—DISTRICT AGRICULTURISTS

Increased emphasis was given to Farm Management. This met with favourable response and a growing interest and appreciation of its importance. Work in this field helped to coordinate and give perspective to other phases of extension.

Work in this section included that reported in previous years under "Farm Planning", "Balanced Farming", "Farm and Home Improvement" and "Farm and Home Development". Different terminology used by this Branch at various times indicates a degree of difference in emphasis on various phases, application and methods rather than any conflict of concept. The basic principles were not changed.

The objective in this work was, "to help farm families to help themselves". This was done by teaching people how to utilize the total resources at their disposal to maximize their objectives.

SUMMARY OF ACTIVITIES—AGRICULTURISTS

	1958	1959
Number of meetings	4,274	4,335
Total Attendance	179,377	172,739
Number of Farm Visits	24,124	20,827
Office interviews	62,597	56,483
Phone Calls	52,356	44,955
Letters written	42,351	42,715

FARM MANAGEMENT—SPECIALISTS

Interest in farm business management continued to increase in Alberta during 1959. Wide publicity by many agencies on farm business adjustment problems plus the greater realization by farmers that their profit margins were shrinking was instrumental in more emphasis being placed on this aspect of farming.

The farm management specialists tried to meet this demand as adequately as possible, considering the limited staff and basic research which has been done in these fields. During 1959, the specialists have placed more emphasis on the training and servicing of district agriculturists in farm economics and farm management, rather than on contacts with individual farm operators. Following are the major fields of accomplishment in the farm management field during 1959:

(a) Farm Economics and Farm and Home Management "In Service Training Course"

Half of the D.A. staff and others in the Department of Agriculture attended an intensive two-week course at Olds in August. The first week dealt with principles of farm management and the second covered their practical application to farm people by extension personnel. Lecturers were Dr. A. W. Peterson of Washington State University, Dr. W. A. Jenkins from the Nova Scotia Department of Agriculture and T. A. Peterson, Farm Management Specialist of the Alberta Department of Agriculture. One lecture on farm appraisal was presented by T. Clarke of the VLA. A systematic evaluation indicated that the course was a definite success.

(b) Family Farm Incorporation Publication

Requests for information on farm incorporation prompted the publication of a bulletin outlining the general aspects of this form of farm organization pointing out methods, advantages, disadvantages and several case studies of farms which have been incorporated. Printing should be completed early in 1960.

(c) Farm Management Data Manual

Prompted by strong requests from district agriculturists who were doing considerable work in the field of farm and home management, the farm management specialist staff set up loose leaf manuals in district agriculturists' offices. These are indexed to provide for the orderly filing of farm management standards and worksheets which are to be sent out periodically by the specialists. The index provided for such items as condensed material on wills and estate planning, farm records, analysis, marketing and outlook, business planning standards and other material useful in helping farmers plan their business operations effectively. The loose leaf aspect provided for the deletion of obsolete material and addition of items of current importance. Other branches in the Department will be made aware of this system and it is hoped that greater coordination will result in the issuing of business management materials to district agriculturists.

(d) **Formation of a Farm Management Association**

While the Department's policy of group discussion and local small group farm family workshops on farm and home management has proven very effective in diffusing management skills, some areas progressed to the stage where they felt they would like to establish more concrete information on which to base their farm planning. Approximately 100 farm families in the Lacombe-Red Deer areas who were participating in farm management discussion groups under the guidance of the district agriculturists requested that an over-all association in their area be formed. Its purpose was to provide a more concrete analysis of their farm business and to accumulate basic economic information for the area necessary in better farm business planning.

This experimental association was farmer initiated and supervised by the district agriculturists in the area. Collection of the annual fees and the administration was being carried out by a committee made up of one farmer member from each discussion group. Membership fees collected will go toward purchasing farm record files, record books and payment of wages involved in the analysis of each farmer's business. This will involve several months of part time work each year by a competent calculator operator employed by the association. Professional supervision and advice will be offered by the district agriculturists and the farm management specialist staff. Local community discussion group meetings continue as before, under the district agriculturists' direction this year they had the added benefits of concrete planning information arising out of this formal farm business analysis project. This will serve as a pilot project to ascertain whether other farm areas in the province might benefit in a similar program as a supplement to the Farm and Home Management discussion groups directed by the district agriculturists.

(e) Several new aids were prepared for the use of district agriculturists for their use in farm business management extension. Among these are:
   (1) Detailed farm business analysis sheet
   (2) Farm lease worksheet
   (3) Basic father-son agreement form
   (4) Worksheet calculating farm machinery costs.

Farm Management Specialist Extension Staff

Specialist staff in farm management consisted of one person for the major portion of 1959. Two additional staff were added in November and December to work in the field of farm economics and farm management.

A Report of Extension Work done by District Agriculturists in the Field of Farm Economics, Farm and Home Management and Related Fields in 1959.

The major portion of the work done by the Farm Management Specialist staff was directed at the district agriculturist and other extension personnel. Therefore, a thorough evaluation of the effectiveness of their efforts cannot be made unless activities of the whole extension staff in this field are assessed. The following is a summary of district agriculturists' activities in Farm Management and related fields.

Individual Contacts	
Farm visits	1,871
Office visits	3,942
Number of farm families involved	999
Small Groups	
Number of organized Farm & Home Development Discussion groups	69
Number of families in discussion groups	543
Number of group meetings	563
Attendance	7,630
Mass Meetings and Short Courses	
Number	135
Attendance	6,176
Other work attended to by the Farm Management Specialist staff	
Farm meetings, workshops, in which specialists participated	38
Individual farm visits	44
Regional district agriculturist workshops held	4
Visits to individual district agriculturists' offices	47
Letters written to answer requests on:	
Farm records, analysis budgeting	43
Farm leases, partnerships	37
Credit, estate planning	11
Miscellaneous requests	46
Total	137
Reports written	5

HOME MANAGEMENT

	No.	Attendance
Lectures and Demonstrations	122	3,587
Home Visits	507	....
Home Visits (Farm and Home Development)	242	....
Group Meetings (Farm and Home Development)	161	....
Otherwise Assisted	1,289	....

In greatest demand were topics dealing with consumer problems such as "Planning and Buying Home Furnishings, Appliances and Equipment", "Stretching the Food and Clothing Dollar", "Money Management", "Legal Aspects When Buying". Next in demand were requests for guidance in the Use and care of appliances and the many new products and fabrics which presently confront homemakers.

There was an increased interest in the keeping of Home Accounts, Inventories and Records which were successfully met by group discussion techniques followed by individual assistance. With the resultant information, District Home Economists were better able to assist these families in making the more fundamental decisions of home and money management. Thus, this service assisted homemakers not only with the problems of management dealing with the routine of household tasks, but also encouraged them to give meaning and direction to the activities of the home so that higher family aims were set and accomplished.

FOOD AND NUTRITION

	No.	Attendance
Demonstrations	66	....
Lectures	98	5,751
School Lunch Programs (Organized and assisted)	6	....
Home Visits	310	....
Otherwise Assisted	2,985	....

Additional information was given at meetings of sixty-three 4-H food and garden clubs and achievement days on food preparation, preservation and standards.

Timely information related to foods, menu planning and purchasing food was given through newspaper articles, newsletters, radio, and television releases.

Topics and problems most commonly dealt with were: Freezing and other Food Preservation Methods, Your Food Dollar, Meat Selection and Preparation, Family Nutritional Needs, Meal Planning, Emergency Feeding, New Ideas for Efficient Food Preparation and Service, Quantity Food Service, Weight Control and Other Special Diets.

Home makers were assisted through provision of unbiased consummer and nutrition information, a service which meets a real need considering the increased size of the average family, rising food costs, and the influence of highly organized advertising and selling techniques.

CLOTHING AND HOME SEWING

	No.	Attendance
Sewing Clinics (3½ days or more)	96	4,130
Sewing Clinics (one day only)	7	99
Demonstrations and Lectures	249	4,990
Individuals Assisted	1,183	....
Home Visits re Clothing	402	....

Ever on the increase was the demand for sewing clinics and for knowledge of clothing and related subjects. On the average each District Home Economist conducted five or six sewing clinics and gave seventeen demonstrations or lectures in the clothing and textile fields.

Homemakers were quick to realize the advantages and importance of wise selection of clothing for their families. Proper selection of fabric, accurate fit, suitability and ease of care, were points which they were anxious to learn. The District Home Economist provided this information to the homemaker which allowed purchases to be made without the influence of high pressure advertising.

The Clothing Specialist was called upon to give instruction in advanced sewing, to evaluate and provide new information for use of field staff through newsletters and conferences, to prepare demonstration materials and to arrange for loan of these materials, to train new staff members in the clothing and handicraft programs, to reply to letters and telephone calls, to give demonstrations and lectures to various groups, to judge clothing and handicraft displays, to prepare and revise publications for distribution to the general public, and to perform other related duties.

HOME DESIGNING

	No.	Total Attendance
Lectures and Demonstrations:		
(a) Housing	40	....
(b) Decoration	58	....
		2,195
Homes Planned:		
(a) Complete	14	....
(b) Partial	85	....
(c) Building and Finishing Materials	133	....
Homes Remodelled:		
(a) Complete	26	....
(b) Kitchens	77	....
(c) Other	36	....
Major Improvements	36	....
Individuals Assisted in Interior Decorating	1,313	....

During 1959, the home visit continued to be the most effective means of assisting rural homemakers with their proposed building, decorating and remodelling projects. The greater number of new materials available today increased the need for professional advice.

The Home Decorating Clinic continued to be greeted with enthusiasm and tends to promote active interest in current trends.

Mrs. Arlene Speers, past Home Designing Specialist, appeared in a C.B.C. Farm Facts television presentation early in the year to familiarize viewers with the work done by the department. Miss Shirley Wood, the current specialist assumed her duties in July and participated in radio broadcasts to advise the listeners of the continued Home Design services. Home visits were made in conjunction with the District Home Economists throughout the province.

HANDICRAFTS

	No.	Attendance
Lectures and Demonstrations	205	4,467
Individuals Assisted	646	....

A very substantial increase in handicraft demonstrations and lectures occurred during 1959. Although the District Home Economist did not try to stress the learning of crafts to homemakers before the basic information—food, clothing, home management, were learned, the District Home Economist will teach the more practical type of crafts, and especially stressed the principles of good design in her teaching.

Handicraft displays continued in popularity. The District Home Economists were called upon to judge and comment upon the exhibits, with a view to improve standards of workmanship and choice of craft.

OTHER ACTIVITIES

District Home Economists arranged programs, lectured or demonstrated at one hundred and five meetings and short courses in conjunction with District Agriculturists, Agricultural Service Boards, and the Canada Department of Agriculture. Cooperation was also given the Department of Indian Affairs, Rural Health Units, Veterans Land Act and assistance given such local organizations as the Y.W.C.A., School Boards, Relief Services, Social Service Clubs, etc.

Topics related to etiquette, group receptions and quantity service, table setting and special occasions were discussed at fifty-seven demonstrations attended by one thousand six hundred and forty-five people. Individual assistance was given to five hundred and fifty-eight.

Fifteen lectures attended by 639 persons dealt with Happy Family Relationship and Child Guidance topics, and one hundred and seventy-six individuals were given assistance in this field.

There were 259 general discussions outlining the services of this Branch, and 35 regarding the School of Agriculture and Home Economics courses with a total attendance of 9,629. In addition, specific information was given 1,450 individuals.

INFORMATION AND PUBLICITY

All District Home Economists prepare weekly newspaper articles and monthly newsletters. There was opportunity for increased use of radio and television had time permitted.

Newspaper articles	1,070
Number of newspapers using releases	129
Radio releases	54

Television releases	21
Television interviews and demonstrations	11
Radio Talks and interviews	40
Newsletters written	207
Average circulation	13,501
Publications distributed (on request)	67,850

4-H GIRLS' CLUBS

District Home Economists organized and supervised the clubs in their districts. They were assisted by specialists and summer staff with activities such as: Leaders' Courses, rallies, camps, judging competitions, and efficiency weeks. Complete details of these activities are found in the report of the Junior Activities Branch.

Number of Clubs	158
Total organized 4-H functions	1,320
Total attendance	31,490
Total home visits on 4-H and other Junior work	471

SUMMARY OF ACTIVITIES—HOME ECONOMISTS

	1958	1959
Demonstrations, lectures, field days and short courses	2,096	2,200
Fairs, conventions judged and addresses	232	212
Total attendance	95,448	95,434
Letters requesting information	23,331	22,827
Home visits	2,869	2,725
Girls' Clubs	143	158
Office Interviews	5,634	5,661
Phone calls for information	9,986	9,682
Newspaper articles	921	1,070

AGRICULTURAL ENGINEERING

Part-time Staff

C. W. Kirk—Summer Assistant (Olds School of Agriculture)
V. W. Osbaldeston—Summer Assistant (Fairview School of Agriculture)
G. L. Shanks—Rural Electrification Insrtuctor
C. Cloutier—Assistant Rural Electrification Instructor
J. L. Marr—Rural Welding Instructor (1958-59, 1959-60)
T. A. Tape—Rural Welding Instructor (1958-59)
R. W. Cheshire—Rural Welding Instructor (1959-60)

Agricultural Engineering service was provided during 1959 by two full-time Extension Engineers, with summer assistance from the two Farm Mechanics Instructors at the Olds and Fairview Schools of Agriculture (May through August inclusive), two rural electrificatoin instructors and two rural welding instructors. There was no marked change in the activities carried on as compared to 1958, but there was an appreciable increase in work done in the Buildings section and Farmstead Mechanization section, and a further decline in the work, on a group basis, with Field Machinery and Power Equipment.

During the year the second Rural Welding instructor and school unit resulted in a sharp increase in rural welding students taking the course. Rural Electrification schools showed a drop in both number of schools and number of students due to a shift from five day courses to two day courses, all of which will be conducted in 1960 rather than a series running from mid November to the end of March. The trial run of two day schools in 1958 (November and December) accounted for most of the increase in student numbers reported in that year.

Buildings' schools jumped to first place in popularity and requests for these courses exceeded the ability of the staff to provide them—sixteen requests had to be turned down. Plumbing and Sewerage were provided at the same number of centres, but here also seven requests had to be refused. Sewerage field days were provided at an increased number of centres, and while the total attendance was down at these events, the average number was much more manageable than the huge crowds that turned out at a few of these events the previous year. Co-operation of the Plumbing Inspection Branch of the Department of Health is very gratefully acknowledged. Throughout the province there are now 46 sets of re-usable septic tank forms in service in the Municipal Districts and Local Improvement Districts on a rental basis.

Survey services show an appreciable decline due mainly to removing survey work with relation to sewerage installations from surveys and placing this in farm calls. Survey work included only drainage, contour, conservation and major farmstead work.

Requests for individual farm calls increased in number, but at least half of these were refused because of pressure of other work. Office calls increased very rapidly—the individuals coming from all parts of the province, but the majority, naturally from within a fifty mide radius of headquarters. Office calls reached such proportions that they seriously curtailed routine work.

Agricultural Engineering activity, as reported by the District Agriculturists included a large amount of general work, primarily of an inidivdual nature, carried out by the D.A., as well as the group activities conducted to a large extent by the specialists. In addition, some work with the Irrigation section and possibly some with commercial representatives of machinery, equipment and building suppliers, was also included in the totals reported from the field.

The following tables summarize Agricultural Engineering work for 1959:

SPECIALISTS AND INSTRUCTORS WORK

Activity	1957		1958		1959	
	No.	Attendance	No.	Attendance	No.	Attendance
Group Approach						
Schools:						
Building	Nil	....	5	330	28	1,440
Water & Sewerage	12	700	27	1,450	26	1,245
Rural Electrification	17	677	18	990	12	424
Rural Welding	18	500	20	477	34	790
Demonstrations and Field Days:						
Water & Sewerage	14	800	26	1,100	32	1,170
Machinery	25	1,475	23	2,000	14	1,170
Buildings	......	....	......	....	8*	395
General:						
Short Courses & Meetings	248†	11,340	235†	8,904	4	395
Farm Notes	12	....	8	....	10	....
Radio & T.V. Programs	14	....	......	....	14 (18 suggested)	....
Plan Production	11	....	8 sets	....	2	....
Bulletin Revision	1	....	......	....	2 (plus Ag. Eng. section of Alta. Farm Guide)	....
Individual Approach						
Farm Calls	252	....	446	....	414	....
Office Calls	......	....	162	....	290	....
Letters	750	....	700	....	750	....
Surveys	41	....	73	....	24	....
Staff						
D.A. Office Calls	......	....	162	....	165 (39 offices)	....
Refresher Courses	Nil	....	4 (buildings)	....	Nil	....

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*This included 6 Dairy Field Days where building discussion and inspection was carried out.

†Numbers reported in 1957-58 included all meetings and short courses reported by D.A.'s where some Ag. Eng. material was given.

DISTRICT AGRICULTURISTS REPORT ON AGRICULTURAL ENGINEERING

	Farm Calls	Office Calls	Demonstrations		Schools		Short Courses & Meetings	
			No.	Attendance	No.	Attendance	No.	Attendance
Machinery	335	730	14	850	3	72	8	394
Field Engineering	153	397	7	101	......	....	3	88
Buildings	888	1,915	9	423	24	1,855	14	1,049
Farmstead Mechanization, Rural Electrification, Water Sewerage, Feed Handling	590	2,122	33	1,136	64	3,069	20	477

STATISTICS

The Dominion Bureau of Statistics was the principal agency in Canada responsible for collecting and compiling agricultural statistics. Basic data is obtained every five years by means of the census; and the agriculture division of the bureau prepares intercensal estimates of live stock numbers, crop acreages and yields, farm income, etc., on the basis of mailed questionnaires.

The Statistics Division of the Extension Service co-operated with the Dominion Bureau of Statistics in every way possible. An annual Dominion Provincial Conference on Agricultural Statistics maintained the co-operative effort. At the last conference, held in February, 1959, current problems, the farm income and expenditure survey, and plans for the 1961 census of agriculture were the main topics of discussion.

In co-operation with the Field Crops Branch, the work of developing a method of estimating forage crop seed production continued in 1959. Substantial progress was made in respect to estimating grass seed production. However, the estimates arrived at cannot be verified until the end of the marketing year. Since a considerable portion of legume seed production remains to be threshed, no attempt was made to estimate the amount produced.

Crop reports were prepared at two-week intervals during the summer—eleven in all; and thirteen summaries of crop conditions were compiled for publication by the Dominion Bureau of Statistics. The co-operation of some two hundred and fifty (250) crop correspondents, without whose help our crop reporting service would not be possible, is hereby gratefully acknowledged.

Advance estimates on farm income from the sale of principal products were prepared monthly for publication in "General Summary of Statistics" published by the Department of Industries and Development.

The steady demand for statistics on the part of the public and all departments of government, continued to engage the staff of the Division a good part of the time. The Supervisor was frequently called upon to prepare memorandums on special topics; for example, on regarding the prospects for the small farm in Alberta and a preliminary study of crop insurance in the Province.

Field Crops

The light snowfall of last winter melted early and the moisture was absorbed into the soil with little run-off. Windy weather in April dried surface soils. There was considerable soil drifting in the south and on light soils as far north as Lacombe and Two Hills. At the end of April, moisture was generally poor to fair except in the southwest and the Peace River area. Subsoil moisture reserves were low in nearly all parts of the province.

May was windy and cold. By the middle of the month seeding was about completed in the Medicine Hat-Taber regions; progress was spotty in other parts of the province. Many farmers delayed seeding hoping to destroy at least one crop of wild oats but, in many districts, there was little growth of any kind until the end of the month. By that time most of the seeding was completed except in the southwest where excessive moisture had delayed operations.

Surface moisture conditions during June were reasonably good. However, there were exceptions. Stubble crop in east central districts—Medicine Hat to Vermilion—suffered from drought; in the Peace River moisture variability resulted in spotty growth.

Hot weather in July accentuated the effects of minimum subsurface moisture supplies. Crops on stubble from Vermilion to Sedgewick and south to the Red Deer River suffered most damage. Some fields were pastured or turned to fallow. However, for the province as a whole crop yields were above average.

Considerable numbers of grasshoppers hatched in the triangle between Coutts, Fort Macleod and Medicine Hat. Lesser infestations occurred at Bindloss, Sibbald, Drumheller and Three Hills. For the third successive year, red-backed cutworms caused damage in the parkland areas. The most severe infestations occurred at Athabasca, Westlock, Lacombe and Red Deer. Successful poison control measures minimized crop losses owing to these pests. The incidence of hail was light.

August was a wet, cold month and crops, especially oats, ripened slowly. By mid-September, the harvest was well advanced in the southeast but, in the other regions, progress varied greatly. The ground was so wet in some central districts that crops could not be cut.

Very little threshing was done in October but work continued intermittently until the end of the year. An accompanying table illustrates the situation at November 1; at December 31, it was estimated that the following percentages of grain remained to be threshed in Alberta: wheat, 18; oats, 12; barley, 12; rye, 9; and flaxseed, 2. The area drained by the North Saskatchewan River contains most of the unthreshed grain.

Early in October, the Alberta Wheat Pool estimated the percentage gradings of the wheat, oats and barley produced. These are shown in an accompanying table. Average grades were considerably below those for 1958 and further deterioration has occurred since early October. Moreover, a lot of grain was threshed very high in moisture content.

Initial Canadian Wheat Board payments for the crop year 1959-1960, were unchanged from last year; wheat, No. 1°, basis Lakehead or Vancouver, $1.40; oats, 2 C.W. basis, Lakehead, $0.60; and barley, 3 C.W. 6 row, basis Lakehead, $0.96. Final prices to be paid on deliveries in the 1958-1959 crop year are not yet determined.

ESTIMATE OF QUALITY, WHEAT, OATS AND BARLEY (PERCENTAGES)

WHEAT

	No. 1°	No. 2°	No. 3°	No. 4°	5, 6 & feed	Garnet	Durum	Winter	Other
1958	1	45	38	8	2	1	3	2	.....
1959	......	10	21	30	34	1	1	1	1

OATS

	2 C.W.	X3 C.W.	3 C.W.	X1 fd.	1 fd.	2 fd.	Other
1958	1	1	5	29	54	8	2
1959	......	......	2	18	59	18	3

BARLEY

	1-4 C.W. 6 row	1-3 C.W. 2 row	Feed Grades
1958	29	12	59
1959	16	9	75

PROGRESS OF HARVESTING PRINCIPAL FIELD CROPS IN ALBERTA, NOVEMBER 1, 1959

	WHEAT				OATS				BARLEY			
	Estimated Acreage	Yield per acre	Not Threshed	Not Cut	Estimated Acreage	Yield per acre	Not Threshed	Not Cut	Estimated Acreage	Yield per acre	Not Threshed	Not Cut
	'000	Bu.	%	%	'000	Bu.	%	%	'000	Bu.	%	%
Medicine Hat-Hanna	864	11.9	6	3	173	25.0	5	2	174	20.6	2	1
Lethbridge-Drumheller	1,409	26.4	14	2	227	50.9	5	1	535	41.1	3	1
Macleod-Calgary	514	22.9	17	2	310	44.9	10	1	446	34.1	9	1
Sedgewick	711	14.7	52	23	336	20.9	51	22	160	18.2	36	12
Vegreville	763	20.4	83	26	561	30.0	73	25	388	22.3	66	18
Red Deer-Edmonton	204	27.6	72	5	541	46.8	56	6	882	31.8	50	4
St. Paul-Athabasca-Edson	331	26.3	53	11	400	46.0	44	10	551	31.3	37	6
Peace River	364	20.2	18	8	302	35.3	16	7	514	26.5	11	5
Province	5,160	20.7	34	10	2,850	37.9	39	11	3,610	30.5	28	5
	FLAXSEED				RYE				RAPESEED			
Province	580	11.4	16	10	98	17.3	9	1	31	747 lb.	18	9

NOTE: At October 31 the estimated amounts produced and the amounts threshed in million bushels were as follows: Wheat, 107.0, 70.8; Oats, 108.0, 66.0; Barley, 110.0, 79.7; Flaxseed, 6.6, 5.5; Rye, 1.7, 1.5; and rapeseed (in pounds) 23,000,000, 18,860,000.

In December, a lot of threshing was done south of Hanna and Olds and in the Peace Ricer country; progress was relatively slow in central regions.

ESTIMATED AREA, PRODUCTION AND VALUE OF FIELD CROPS, ALBERTA, 1958 AND 1959

	Area		Yield per Acre†		Production		Value per Unit		Total Value	
	1958	1959	1958	1959	1958	1959	1958	1959	1958	1959
	— acres —		— bushels —		— bushels —		— dollars —		— dollars —	
Wheat	4,704,000	5,160,000	20.4	20.7	96,000,000	107,000,000	1.31	1.22*	125,760,000	130,540,000
Oats	2,809,000	2,850,000	34.5	37.9	97,000,000	108,000,000	0.54	0.57*	52,380,000	61,560,000
Barley	3,846,000	3,610,000	27.8	30.5	107,000,000	110,000,000	0.75	0.72*	80,250,000	79,200,000
Rye	99,700	98,300	17.1	17.3	1,700,000	1,700,000	0.82	0.85	1,394,000	1,445,000
Mixed Grain	225,000	272,000	32.9	34.9	7,400,000	9,500,000	0.67	0.67	4,958,000	6,365,000
Flaxseed	556,000	580,000	11.7	11.4	6,500,000	6,600,000	2.63	3.20	17,095,000	21,120,000
Special Seed Crops	161,500	128,100	....	....	....	....	....	....	3,732,000	3,297,000
Potatoes	18,700	18,800	140.8	134.8	2,633,000	2,533,000	1.29	1.35	3,396,000	3,420,000
			— tons —		— tons —					
Sugar Beets	38,300	35,250	15.69	13.48	601,200	474,768	15.31	15.30*	9,204,000	7,264,000
Tame Hay	1,996,000	2,075,000	1.25	1.35	2,500,000	2,800,000	16.75	16.50	41,875,000	46,200,000
Forest Products (for sale and farm use)	....	....	....	....	....	....	....	....	2,086,000	1,993,000
Other Field Crops	....	....	....	....	....	....	....	....	13,221,000	12,848,000
Total Acreage and Value	14,454,200	14,827,450							355,351,000	375,252,000

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†Yield estimates may be revised when threshing is completed.

*Estimated by the Alberta Department of Agriculture.

The production of all kinds of grass seeds, with the exception of creeping red fescue, increased in 1959 as compared with 1958. All were harvested in good condition. The producers of legume seeds were not so fortunate. Only in the Peace River district was a substantial amount of the crop harvested. Consequently no estimates of production were arrived at.

The area devoted to tame hay continued to increase. Good weather for haying prevailed in July and the quality of hay cut early was excellent. However, much of the crop cut in August was badly weathered or spoiled.

PRELIMINARY ESTIMATES OF GRASS SEED PRODUCTION IN ALBERTA*

	1958	1959
	— pounds —	
Brome	5,000,000	6,500,000
Creeping Red Fescue	13,250,000	12,500,000
Crested Wheat Grass	475,000	900,000
Timothy	1,000,000	1,170,000
Russian Wild Grass	150,000	330,000
Marian Blue Grass	80,000	50,000

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*Based on a survey conducted by the Alberta Department of Agriculture.

The acreage of commercial vegetables produced in Alberta appears ot have increased. The estimated areas in acres for some vegetables (1958 figures in brackets) were: cabbage, 340 (290); carrots, 350 (260); fresh corn, 800 (900); cucumbers, 250 (200); and onions, 400 (80). Acreages for processing in Manitoba and Alberta combined were: beans, 670 (960); corn, 4,670 (4,560); and peas, 6,660, (6,540).

Contracts for the production of sunflower seed covered 17,000 acres in 1959 compared with 3,700 last year. The areas devoted to the production of mustard seed, rapeseed and sugar beets were down. The production of safflower seed was reduced.

Livestock

Livestock came through the winter of 1958-59 in good condition; but pastures were slow in the spring and it was necessary to feed until later than usual. Grazing conditions varied a lot during the summer but improved in the fall. Stock went into winter in generally good shape.

The June 1 Agriculture Survey showed more livestock on farms than in 1958. The good United States market for finished and feeder cattle which developed in 1958 reduced holdings of young cattle especially steers. However, an increase in the number of beef cows retained, 820,000 in 1959 compared with 785,000 in 1958, indicated that interest in cattle production was still high. Heavy culling may be expected should a series of dry years reduce feed supplies.

A similar situation was evident in respect to sheep. As compared to last year, sheep numbers increased but marketings were down. It would, therefore, seem reasonable to assume that farmers are planning to increase the number of sheep kept for breeding purposes.

On the other hand, interest in hog production was on the down grade. The somewhat higher price of feed grains and lower price supports applicable to limited numbers of A and B_1 hogs, associated with reports of a high level of production in the United States, clouded the outlook for the industry.

NUMBER OF LIVE STOCK ON FARMS, ALBERTA, JUNE 1, 1957, 1958 AND 1959

	1957	1958	1959	1959 as % 1958
		— number —		— per cent —
Cattle:				
Bulls	54,000	53,000	55,000	104
Cows:				
Milk	280,000	275,000	272,000	99
Beef	770,000	785,000	820,000	104
Heifers:				
Milk	56,000	57,000	56,000	98
Beef	267,000	228,000	227,000	100
Steers	408,000	300,000	290,000	97
Calves	765,000	802,000	850,000	106
Total	2,600,000	2,500,000	2,570,000	103
Sheep:				
One year and up	226,000	252,000	278,000	110
Lambs	224,000	235,000	252,000	107
Total	450,000	487,000	530,000	109
Hogs:				
6 months and up	360,000	480,000	550,000	114
Under 6 months	940,000	1,230,000	1,230,000	100
Total	1,300,000	1,710,000	1,780,000	104
Horses	140,000	132,000	120,000	91

PRODUCTION* AND VALUE OF LIVE STOCK, ALBERTA, 1958 AND 1959

	Number		Value	
	1958	1959	1958	1959
Cattle	706,568	659,554	128,655,000	127,746,000
Calves	221,784	227,883	20,108,000	18,857,000
Sheep and Lambs	192,888	239,326	3,189,000	3,716,000
Hogs	2,372,608	2,236,254	93,278,000	75,370,000
			245,230,000	225,689,000

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*Includes net marketings through stockyards and plants, sales for local slaughter, slaughterings on farms and changes in farm inventories.

Livestock Products

The number of cows kept mainly for milk at June 1, decreased from 275,000 in 1958 to 272,000 in 1959. Nevertheless, preliminary estimates showed an increase in farm income from the sale of dairy products. Income from all items except butter and milk for cheesemaking increased.

The production of eggs decreased nearly 10 per cent in 1959 compared with 1958 and average prices dropped slightly. However, expansion in the production of broilers (chickens and turkeys) and mature turkeys maintained income from poultry meats despite a substantial decrease in prices received.

A greater quantity and higher quality of mink fur was produced in 1959 compared with the previous year. Prices received were stronger in some color phases.

The number keeping bees and the number of colonies operated increasd in 1959. However, the season was unfavorable for honey production. Production per hive and total output were substantially below 1958 figures.

ESTIMATED NUMBER OF POULTRY ON FARMS IN ALBERTA JUNE 1, 1957 TO 1959

	1957	1958	1959	1959 as % 1958
Hens and Pullets 6 months and over	2,900,000	3,010,000	2,925,000	97
Pullets 2 to 6 months	1,225,000	1,340,000	1,245,000	93
Cocks and Cockerels 2 months and over	875,000	950,000	850,000	89
Chicks under 2 months	4,750,000	4,500,000	4,670,000	104
Total Hens and Chickens	9,750,000	9,800,000	9,690,000	99
Turkeys	860,000	975,000	1,050,000	108
Geese	80,000	78,000	75,000	96
Ducks	90,000	90,000	85,000	94

AVERAGE PRICES PAID FOR LIVE STOCK, ALBERTA, 1958 AND 1959

	Calgary		Edmonton		Lethbridge	
	1958	1959	1958	1959	1958	1959
	— dollars per hundred pounds —					
Good Butcher Steers	21.49	23.20	20.74	22.67	21.43	23.40
Good Feeder Steers	21.90	23.08	21.23	22.62	22.18	22.91
Good Hdwt. Lambs	18.82	17.45	19.80	17.54	19.77	16.99
B_1 Hogs (Dressed)	24.55	20.35	24.59	20.46	25.19	20.13

ESTIMATED PRODUCTION AND VALUE OF PRINCIPAL LIVE STOCK PRODUCTS, 1958 AND 1959

	Production		Price		Total Value	
	1958	1959	1958	1959	1958	1959
Dairy Products:	— pounds —		— dollars —		— dollars —	
Butterfat for creamery butter*	28,148,000	28,301,000	0.66	0.66	18,556,000	18,650,000
Dairy Butter	2,643,000	2,448,000	0.59	0.60	1,559,000	1,469,000
	— hundred pounds —					
Milk and fat for ice cream	556,750	576,290	2.85	2.80	1,586,000	1,591,000
Milk for cheese & concentrating	654,900	654,580	2.73	2.76	1,790,000	1,804,000
Milk and cream for fluid sales	3,484,030	3,604,930	4.34	4.32	15,111,000	15,605,000
Milk consumed on farms	1,514,000	1,417,000	2.62	2.62	3,967,000	3,713,000
Milk for farm animals	590,900	562,100	2,62	2.62	1,548,000	1,473,000
Skim milk, etc., fed on farms	7,663,940	7,600,322	0.35	0.35	2,683,000	2,661,000
Total Value					46,800,000	46,966,000
Poultry Products:						
	— dozen —					
Commercial Eggs	46,286,000	43,288,000	0.30	0.29	13,676,000	12,603,000
Hatching Eggs	1,316,000	1,373,000	0.59	0.57	776,000	781,000
	— pounds —					
Poultry Meat (eviserated)	44,360,000	48,832,000	0.34	0.30	15,169,000	14,886,000
Total Poultry Products					29,621,000	28,270,000
Honey	7,574,000	5,095,000	0.15	0.15	1,187,000	798,000
Wool	2,025,000	2,360,000	0.44	0.42	881,000	988,000
Fur Farming	— Value pelts and Live Sales —				2,289,000	2,291,000
Other Live Stock Products					2,088,000	1,732,000
Total Live Stock Products					82,866,000	81,045,000

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*Includes butterfat manufactured into butter oil and butter concentrate.

SUMMARY OF VALUE OF AGRICULTURAL PRODUCTS, ALBERTA, 1956-1959

	1956	1957	1958	1959
	— thousand dollars —			
Wheat	169,400	123,690	125,760	130,540
Other grains	185,803	136,728	156,077	169,690
Other Crops	53,560	68,506	73,514	75,022
Total Crops	408,763	328,924	355,351	375,252
Live Stock	161,783	193,867	245,230	225,689
Other Live stock products	82,509	83,830	82,866	81,045
Total Live Stock	244,292	277,697	328,096	306,734

UTILIZATION OF IMPROVED FARM LAND

	1941*	1946*	1951*	1956*	1959†
Field Crops:	— thousand acres —				
Principal Cereals‡	11,326	11,591	12,819	12,621	12,570
Tame Hay§	602	874	1,206	1,614	2,075
Other Fodder Crops	268	280	283	400	400
Potatoes and sugar beets	48	56	54	56	54
Other Field Crops**	10	39	48	159	146
Total Field Crops	12,254	12,840	14,410	14,850	15,245
Garden, Orchard, etc.	29	26	18	11	11
Improved Pasture	626	731	1,113	1,280	1,586
Summerfallow	6,546	6,012	6,195	7,091	6,738
Other Improved Land	670	423	535	525	525
Total Improved Land	20,125	20,032	22,271	23,757	24,105

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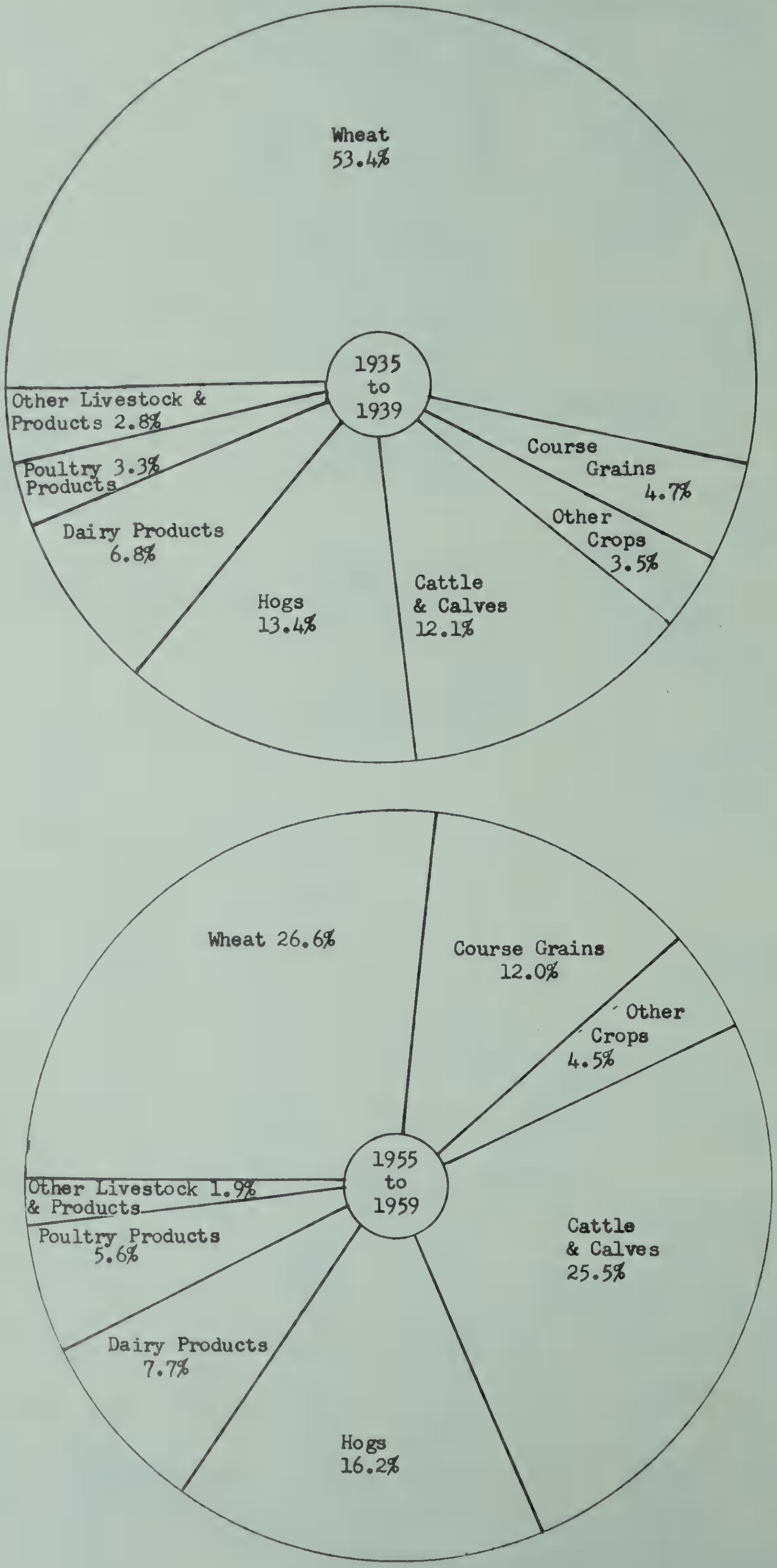
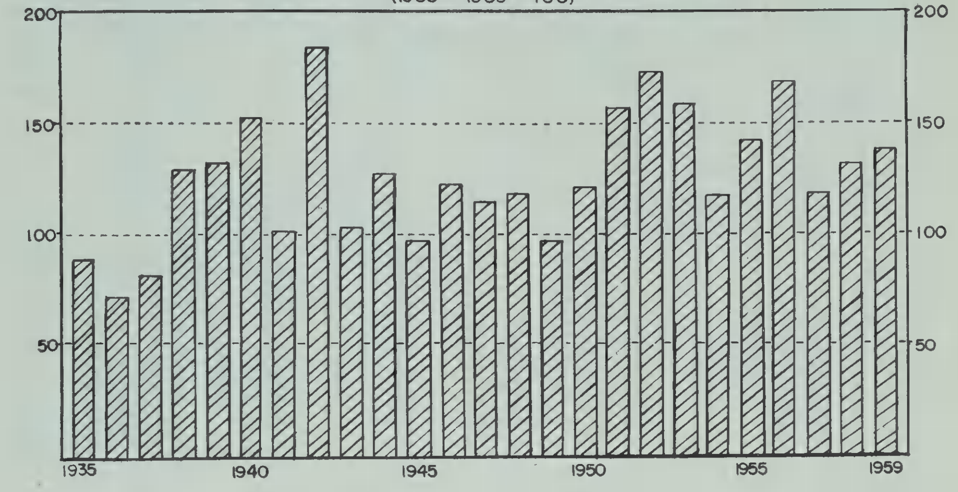
*Census of Canada.
†Estimated.
‡Wheat, oats, barley, rye and flaxseed.
§Includes areas in forage crop seeds.
**Mustard, rapeseed, dry peas, sunflowers, safflower, vegetables, etc.



Source of income from the sale of Farm Products

INDEX NUMBERS OF THE PHYSICAL VOLUME OF AGRICULTURAL PRODUCTION, ALBERTA, 1935 - 1959

(1935 - 1939 = 100)



Farm Cash Income

A preliminary estimate of farm cash income indicates little change from 1958. Income from grain including payments on participation certificates increased, but income from live stock sales were down owing largely to a decrease in marketings in the latter part of the year. It would appear that the portion of farm income earned through sales of live stock and products will again be about 60 per cent of the total.

NET INCOME OF FARM OPERATORS FROM FARMING OPERATIONS

	1956	1957	1958	1959
	— thousand dollars —			
Cash income from the sale of farm products	436,653	436,346	484,697	476,774
Income in Kind*	41,526	40,733	43,570	42,624
Value in Changes in inventory	53,022	–41,623	–18,296	–11,400
Gross income	531,201	435,456	509,971	507,998
Operating expenses and depreciation	257,952	250,721	265,290	275,599
Net Income from Farming operations	273,249	184,735	244,681	232,399
Supplementary payments†	1,319	905	19,394	7,128
Net Farm Income	274,568	185,640	264,075	239,527

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*Includes estimated rent of farm homes.

†P.F.A.A. and (in 1958) Western Grain Producers' acreage payments.

CASH INCOME FROM THE SALE OF FARM PRODUCTS AND SUPPLEMENTARY PAYMENTS*

	1957		1958		1959	
	$'000	% of Total	$'000	% of Total	$'000	% of Total
Field Crops:						
Wheat	116,132	26.6	113,047	22.4	119,313	24.7
Oats	8,964	2.0	5,816	1.1	4,009	.8
Barley	28,305	6.5	33,745	6.7	35,675	7.4
Wheat Board Advances	4,375	1.0	335	.1	792	.2
Rye	1,086	.2	1,705	.3	1,248	.3
Flaxseed	14,048	3.2	9,878	2.0	16,656	3.4
Potatoes	1,679	.4	1,807	.4	1,673	.3
Vegetables	1,265	.3	1,005	.2	1,073	.2
Other Crops	15,650	3.6	18,651	3.7	15,897	3.3
Total Field Crops	191,504	43.8	185,989	36.9	196,336	40.6
Livestock:						
Cattle and Calves	110,704	25.3	149,720	29.7	132,214	27.3
Sheep and Lambs	2,548	.6	2,729	.5	2,845	.6
Hogs	65,442	15.0	77,794	15.4	77,878	16.1
Dairy Products	33,912	7.8	37,073	7.4	37,569	7.7
Poultry Products	25,949	5.9	24,479	4.9	23,718	4.9
Other Livestock	5,685	1.3	6,425	1.3	5,785	1.2
Total Livestock	244,240	55.9	298,220	59.2	280,009	57.8
Forest Products	602	.1	488	.1	429	.1
P.F.A.A. and Acreage Payments	905	.2	19,394	3.8	7,128	1.5
Total Farm Cash Income	437,251	100.0	504,091	100.0	483,902	100.0

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*Interim and final payments made by the Canadian Wheat Board on participation certificates (wheat, oats, barley) are included in the calendar year in which payments were received by farmers.

FARM OPERATING EXPENSES AND DEPRECIATION CHARGES

	1956	1957	1958	1959
	— thousand dollars —			
Taxes*	19,149	19,245	19,179	19,947
Gross Rent	19,500	15,301	16,258	16,526
Hired Labour	25,390	22,544	24,965	25,107
Interest on Indebtedness	7,470	7,606	8,062	8,407
Feed and Seed†	14,038	13,693	15,622	16,849
Tractor	38,197	38,072	41,315	42,389
Truck	20,609	20,880	22,480	23,657
Automobile‡	8,615	8,717	9,043	9,136
Engine and combine	3,959	3,886	4,454	4,242
Machinery Repairs and Shop Charges	13,251	13,733	14,205	15,714
Fertilizer	3,136	3,549	4,565	6,112
Fruit and Vegetable Supplies	3,270	3,236	3,366	3,722
Building Repairs	9,400	8,643	9,406	10,430
Electric Power	1,334	1,441	1,677	1,841
Miscellaneous	14,873	15,143	15,765	16,131
Total Operating Expenses	202,191	195,689	210,362	220,210
Depreciation, Building and Machinery	55,761	55,032	54,928	55,389
Total Operating Expenses and Depreciation	257,952	250,721	265,290	275,599

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*Owned land and buildings only.
†Purchased through commercial channels.
‡Farm Business share.

Report of the Veterinary Services Branch

E. E. BALLANTYNE, V.S., D.V.M., M.R.S.H., Director

J. G. O'Donoghue, V.S., D.V.M., Extension Veterinarian
C. H. Bigland, V.S., D.V.M., D.V.P.H., Veterinary Pathologist
G. S. Wilton, V.S., D.V.M., Veterinary Pathologist
H. N. Vance, V.S., D.V.M., Veterinary Pathologist
F. E. Graesser, B.S.A., V.S., D.V.M., Veterinary Micropathologist
H. C. Carlson, V.S., D.V.M., Veterinary Pathologist
G. R. Whenham, V.S., D.V.M., Veterinary Bacteriologist
J. P. Best, V.S., D.V.M., Supervisor, Veterinary Inspection
W. P. Brisbane, V.S., D.V.M., Supervisor, Brucellosis Control

General

An increasing awareness was noted that disease prevention and control are an integral part of developing a financially successful livestock enterprise.

No epidemics of serious diseases occurred in poultry or animals during 1959. Losses from the regular diseases of nutritional, bacterial, viral, fungal, parasitic and chemical origin continued as usual with faulty management and nutrition contributing to a high degree as predisposing factors. Scrapie in sheep was a problem for the Federal Department of Agriculture in a few flocks.

Problem disease conditions required more attention but the results are often discouraging to all concerned and financially serious to the producer as the necessary research facilities are not available.

Psittacosis, a virus infection of psittacine birds, was diagnosed in Alberta for the first time. Two of our laboratory staff became infected from the disease specimens but fortunately survived.

A preliminary Q fever survey was commenced in cattle and sheep with the Department of Health conducting a similar survey in humans to detect possible indication of the disease in Alberta.

The Brucellosis Restricted Area program expanded greatly. The Federal Department of Agriculture, Health of Animals Branch, commenced testing in November in their first Brucellosis Control Area, namely the M.D. of Starland No. 47. Early results showed a very low incidence of infection, further proof of the value of our calfhood vaccination program. 366,058 calves were vaccinated compared to 304,026 in 1958.

Veterinary inspection of livestock was expanded to include Classes E and F stockyards, in addition to Class D. A total of 510,625 head were inspected compared to 387,000 at D stockyards only in 1958.

The Laboratory services were utilized heavily with 15,328 specimens examined compared to 14,514 in 1958. 30,968 cattle, 32 sheep, 495 buffalo, 364 elk, 128 moose, 7 deer, and 570 poultry blood tests were also conducted. More problem disease work was done than in former years and the arrangements for bacteriology and virology improved.

The system of obtaining vital statistics from practising veterinarians inaugurated in 1957 was improved and expanded. The data obtained to date has been of value in directing Branch efforts to improve preventative measures on the main economic diseases. The information obtained in this manner, coupled with the laboratory statistics give a good basic idea of the disease picture in the province.

Several individuals were assisted by advice and plans to build satisfactory slaughter houses.

During the year Dr. W. P. Brisbane became Supervisor of Brucellosis Control. Dr. C. H. Bigland was granted leave of absence to undertake postgraduate studies at the University of Alberta.

Other members of the technical staff were Mr. J. Bacle (Agriculture, France) and Mrs. G. Henningson, B.Sc., who do the routine bacteriology.

Details of the various activities are outlined below with additional data and technical tables to be included in the addenda of the Branch report.

Veterinary Personnel

(a) Students

The following number of Albertans were attending the Ontario Veterinary College for the 1959-60 year.

First year	9
Second year	6
Third year	9
Fourth year	7
Fifth year	7
Total	38

The Department pays a $200.00 grant to each on successful completion of each year's examinations.

(b) Practising Veterinarians

During the year 16 more veterinarians entered practice, 6 on their own and 10 as assistants to established practitioners. There are still several openings for practice.

(c) College

Considerable time was devoted to the work of the Committee to determine whether there is a need or not for a veterinary college in western Canada. The matter was given a very thorough and exhaustive factual study with the conclusion that the two present veterinary colleges in Canada could not supply the present and future needs of the western provinces and that immediate action should be taken to establish a veterinary college as a separate faculty on a western university campus. The Ministers of Agriculture of the 4 western provinces after visiting Ontario decided for the universities that a veterinary college would not be built at present in the West as Ontario expressed confidence that they could supply western needs.

The members of the Committee making the study were from the Universities, Departments of Agriculture and the Veterinary Medical Associations of the 4 western provinces.

Rabies

There were no cases of rabies. Through the co-operation of the Department of Lands and Forests, and the Field Crops Branch a survey was conducted of wildlife in the forests and coyotes in the agricultural areas bordering on the forest. All tests conducted at the Federal Veterinary Research Laboratory, Lethbridge, were negative. It is encouraging to note that the public are still aware of the disease and have many heads forwarded for examination. During the year heads from 25 dogs, 3 cats, 1 bull, 42 coyotes, 4 wolves, 1 fox, 1 horse, 2 groundhogs, 1 beaver, 1 muskrat, 1 bear, 1 deer, 1 gopher, 1 rabbit and 1 squirrel were forwarded to our laboratory for icing and re-shipment to Lethbridge.

A lecture on rabies was given to the R.C.M.P. personnel being trained for northern duty.

T.B. of Poultry and Hogs

Reports indicate that the education program of the past several years has resulted in a considerable improvement in keeping poultry and hogs separate which coupled with better husbandry practices, has helped to reduce the incidence of the disease.

Approximately 681 letters were sent out to owners whose hogs showed evidence of tuberculosis which is a reduction of over 300 letters from previous years.

T.B. Restricted Areas

The Health of Animals Division, Federal Department of Agriculture made good progress in the testing program with only a few marginal areas to complete. The expectations are that early in 1960 all areas in Alberta will have been tested at least once. Several are under retest. Seventy-two Municipal Districts, Counties, Improvement Districts and Special Areas are T.B. Restricted or Accredited Areas, an increase of 10 over 1958. The rate of infection continues to be very low.

Civil Defence

Considerable time was spent on civil defence to further train the veterinary profession and others to enable protection of the livestock industry and those consuming livestock products, in case of nuclear, chemical and biological warfare. The Director lectured at a Civil Defence course sponsored by the Alberta Veterinary Medical Association and the Alberta Civil Defence Headquarters at Red Deer. He also attended an Emergency Health Services Conference at the Canadian Civil Defence College, Arnprior, as chairman of the C.D. Committee of the Canadian Veterinary Medical Association and is editing a manual on veterinary civil defence for the latter association.

Permits

Permits were issued under the Livestock Diseases Act for the following:

(a) Brucellosis—to 105 veterinarians to use Brucella abortus Strain 19 vaccine.

(b) Poultry Disease Vaccines—to 42 veterinarians, 44 druggists and 27 hatcherymen to sell such vaccines, the latter to their supply flock owners only. 882,000 doses of infectious bronchitis vaccine, 149,000 Newcastle disease vaccine and 10,500 doses of combined I.B. and N.D. vaccine were distributed by permit holders making a total of 1,041,500 doses. The regulations require proper refrigeration facilities to ensure as good a vaccine as possible being received by the poultry owner.

(c) Injectable veterinary biologics—to 100 business or individuals to sell, or distribute same which does not include antibiotics, drugs, etc. All must have refrigeration facilities to ensure proper handling. These permits were instituted in 1950 as the result of an amendment to the Alberta Pharmaceutical Association Act.

Healthy Herd Program For Purebred Swine

A suggested program was outlined to the Alberta Provincial Swine Breeders and Alberta Swine Breeders Associations with the objective that if adopted it would provide disease-free breeding stock. Considerable interest was shown in the suggestion and will be further explored in 1960.

BRUCELLOSIS CONTROL

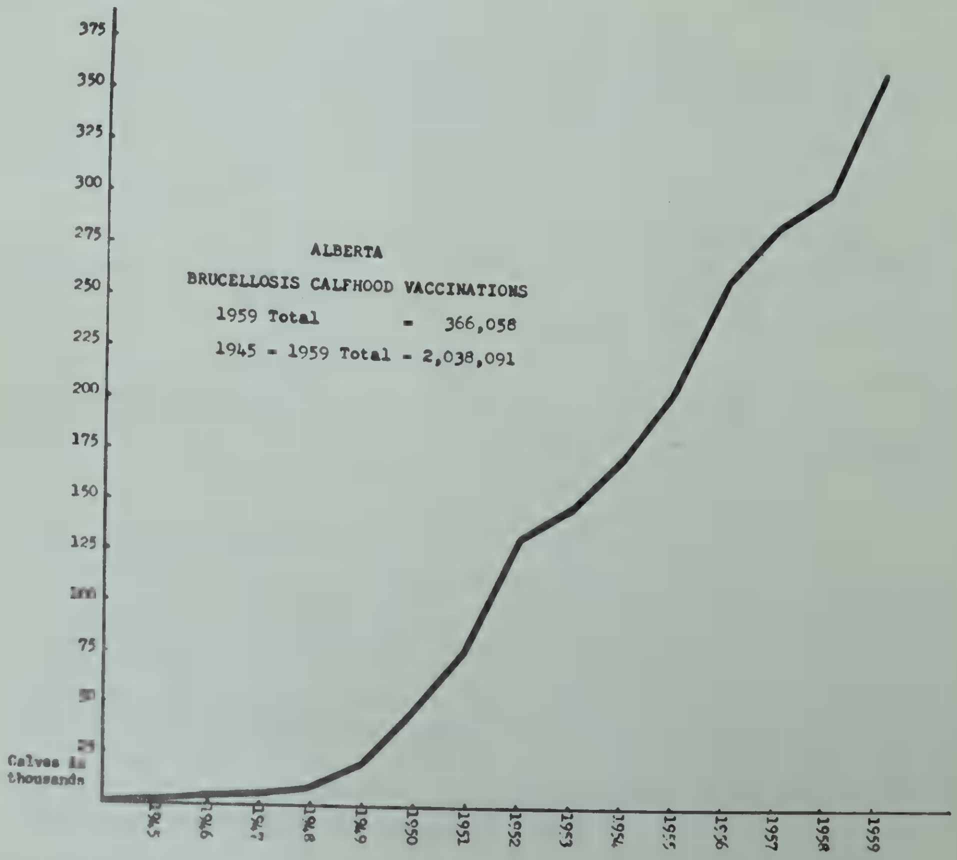
Dr. W. P. Brisbane commenced duties as Supervisor of Brucellosis Control and sterility problems, September 8, 1959.

The Federal program of blood testing and the slaughter of infected animals commenced during November, in the Municipal District of Starland No. 47. The small percentage of reactors 1.7 per cent to date in this area indicates the effectiveness of our vaccination program over the years.

In Alberta there are now six areas gazetted by the Dominion Department of Agriculture as Federal Brucellosis Control Areas, and twenty other Restricted Areas are now eligible to apply as Federal Control Areas, following five years of calfhood vaccination.

CALFHOOD VACCINATION

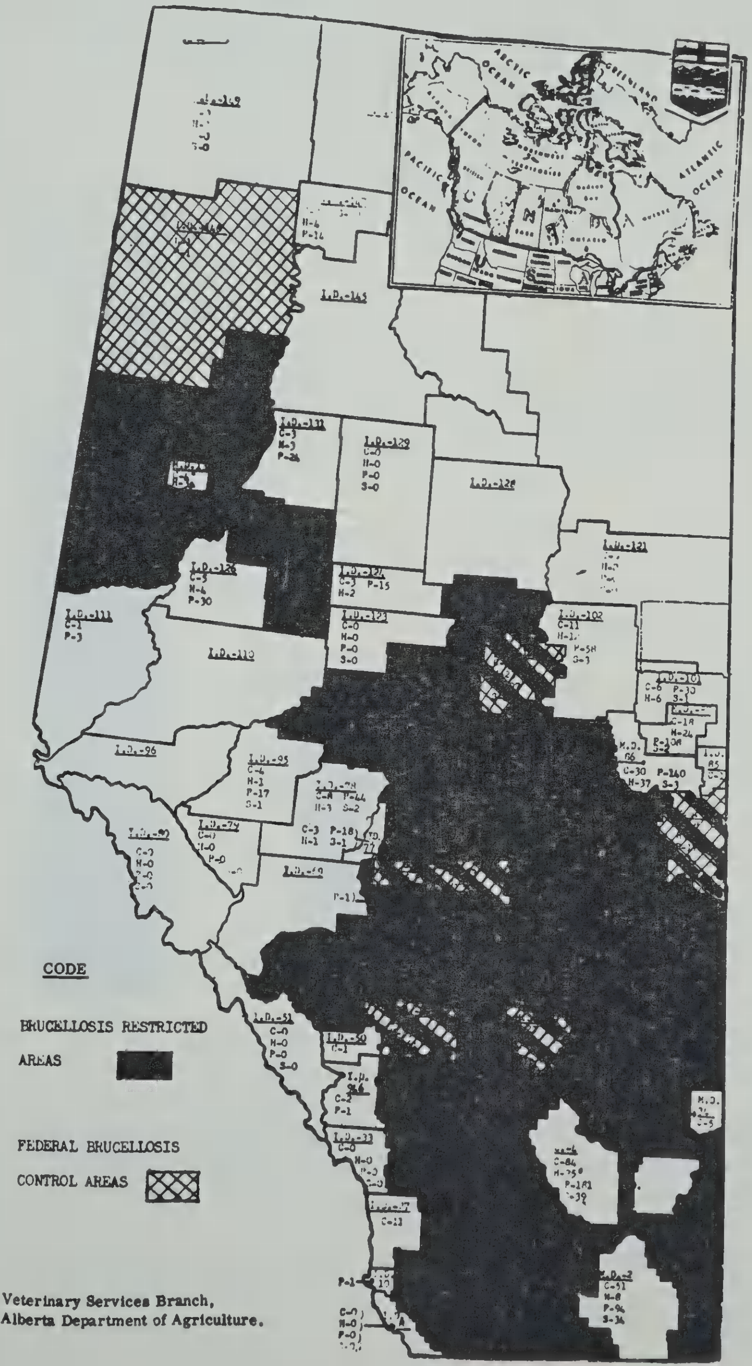
The vaccination of heifer calves with Strain 19 Brucella abortus vaccine has assisted materially in reducing the incidence of brucellosis throughout Alberta.



During the year 366,058 calves were vaccinated with Brucella abortus vaccine, bringing the total calves vaccinated in Alberta since 1945 to 2,038,091. The accompanying chart shows the annual increase in vaccination since 1945.

BRUCELLOSIS RESTRICTED AREAS

During the year the financial assistance granted Brucellosis Restricted Areas was increased from fifty cents to sixty-five cents for each calf vaccinated. This increase allows the municipalities twenty-five cents to defray the expenses incurred for organizational work during the annual vaccination campaign.



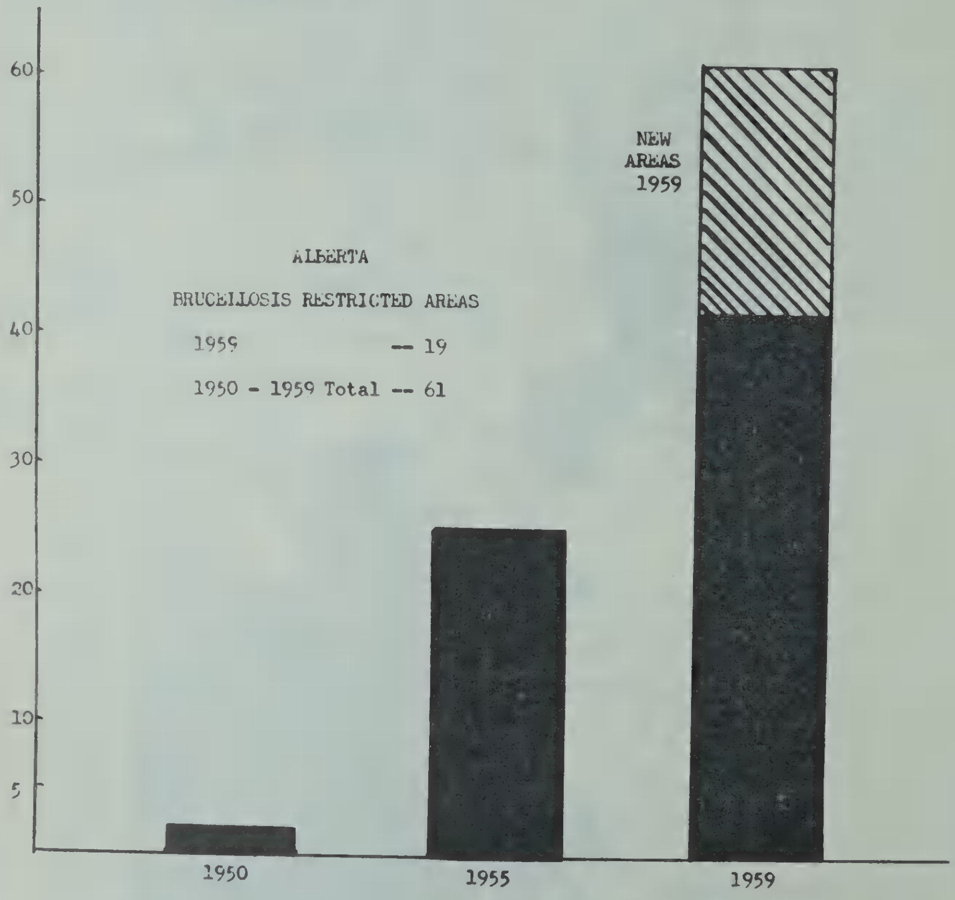
Veterinary Services Branch,
Alberta Department of Agriculture.

The year has shown a marked increase in the number of Brucellosis Restricted Areas, with a total of nineteen new areas being established.

The following areas were establishd as Brucellosis Restricted Areas during the year.

The Municipal Districts of Provost No. 52, Paintearth No. 53, Spirit River No. 133, Smoky River No. 130, the County of Warner No. 5, and Special Areas No. 2 and No. 3. The Improvement Districts Nos. 108, 68, 132, 42, 58, 107, 122, 11, 65, 134, 125 and 22. The accompanying map shows the Brucellosis Restricted Areas along with the Federal Control Areas.

Alberta now has a total of sixty-one Brucellosis Restricted Areas with a cattle population in these areas of approximately two million. The following chart illustrates the increase in Restricted Areas since 1950.



DIAGNOSTIC

Brucellosis tests conducted on cattle sold through the auction sales amounted to 8,638, and showed an incidence of two per cent reactors.

The following chart shows the results of the total Brucellosis agglutination tests by the animal disease section of the laboratory.

BLOOD TESTS FOR BRUCELLOSIS (BANG'S DISEASE) 1959

	Provincial Blood Tests	Percentage	Dominion Blood Tests	Percentage	Total Number of Blood Tests	Percentage
Number Positive	1,039	3.9%	41	1.5 %	1,080	3.7%
Number Suspect	876	3.3%	107	4.2 %	983	3.4%
Number Negative	24,196	91.8%	2,566	94.21%	26,762	92.1%
Number Broken or Hemolized, Etc.	260	1. %	2	.09%	262	.8%
Total Number of Blood Samples	26,371	100 %	2,716	100 %	29,087	100 %

VETERINARY INSPECTION SERVICES

On January 1st, 1959, regulations governing the construction, operation and inspection of Class "E", "F" and "G" Stockyards became effective, and the inspection of these three new classes of stockyards brought the total number of stockyards under supervision of this service up from 34 in 1958 to 405 by the end of 1959. Dr. J. P. Best supervised the operation of the Inspection Service during the year.

Class "C" Stockyards

The number of stockyards licensed under this classification jumped from 13 in 1958 to 49 in 1959. This required a good deal of effort to assure that the construction and sanitary standards required by these regulations were met and sustained.

Class "D" Stockyards

Veterinary inspection is supplied by the Department at all Class "D" Stockyards. The purpose of this inspection was to detect and prevent the spread of animal diseases through public auction sales. In its very nature, the Veterinary Inspection Service is the practise of a branch of Veterinary Public Health, and as its purpose is to prevent the spread of disease, it is impossible to accurately measure the many benefits it has brought to the Livestock Industry of the Province, but this much is known, that Livestock Markets under Provincial supervision enjoy a prestige that is not shared by other markets.

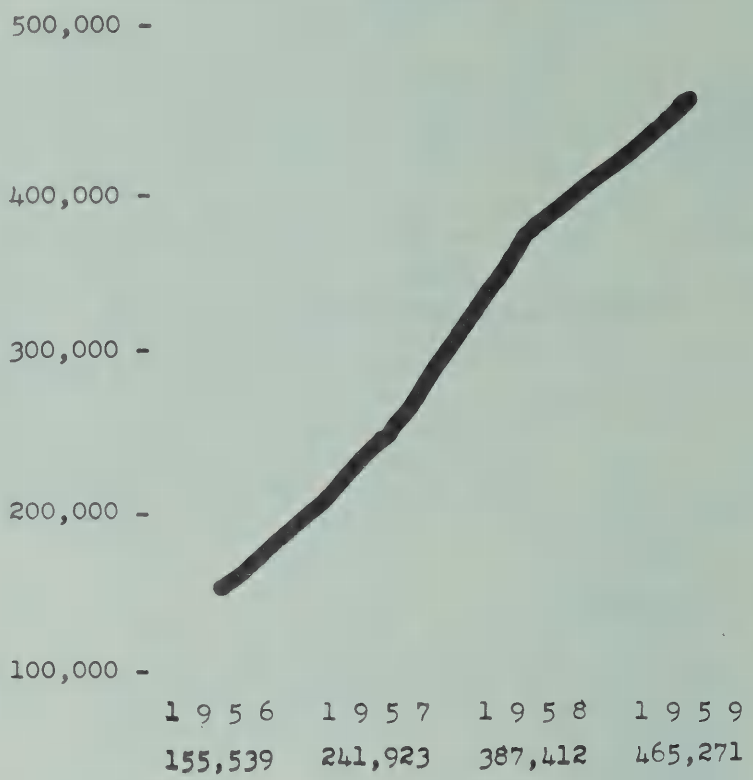
Seven new markets were added to the 21 under inspection last year, an increase of 33 1/3%.

Mastitis in cattle and Rhinitis in swine were the diseases most frequently revealed by our Inspectors; cancer-eye, skin diseases, lump-jaw and pneumonia can also be classified as causes of major losses.

The following charts show the increase in the total of animals inspected, the individual market activities, and the causes of rejections, throughout the province.

It will be noted that the total number of animals inspected at Class "D" Stockyards increased 20.09%, from 387,412 in 1958 to 465,271 in 1959. 2.605% of these animals were rejected because they were diseased, or suspected of being diseased, 0.595% were marked for slaughter in compliance with the Brucellosis Control Regulations, and 0.150% to assist in the enforcement of regulations controlling the sale of grade bulls and boars, for a total of 3,350% rejected.

ANIMALS INSPECTED AT CLASS "D" STOCKYARDS



Class "E" Stockyards

These stockyards handle cattle only, and with one exception are operated by livestock producers co-operatives. Veterinary inspection was provided by the Department.

Four of these markets were active during the year, the following charts show the number of cattle inspected, the number of and causes for rejection.

The 37,675 cattle inspected during the initial year under license will serve as a basis of comparison for 1960. Of the 395 rejected 337 were diseased, 33 were grade bulls and 25 did not comply with the Brucellosis Control Regulations.

Class "F" Stockyards

The Class "F" Stockyards are similar to the Class "E", but are restricted to a maximum of 4 sales per year, as the construction standards are not as high, are therefore more difficult to maintain in a sanitary condition.

Four of these markets operated during the year, the following charts report results of Veterinary Inspection supplied.

A total of 7,679 cattle were inspected, of these only 61 or .79% were rejected.

Class "G" Stockyards

Class "G" Stockyards are essentially livestock buying stations, operating less than 4 days a week.

Inspection of these stockyards is maintained to assure that the animals passing through them are handled in a sanitary and humane manner.

319 Class "G" licenses were issued during 1959. The inspection supplied resulted in considerable improvement in the sanitary conditions of these stockyards, but much work must still be done before these stockyards can be considered satisfactory.

Summary of Veterinary Inspection supplied by the Department through practicing Veterinarians:

At Class "D" Stockyards	465,271	Animals Inspected
At Class "E" Stockyards	37,675	Animals Inspected
At Class "F" Stockyards	7,679	Animals Inspected
Total	510,625	

This service was supplied by the expenditure of 1,708 Man Days of livestock inspection, and 281½ Man Days of sanitary inspection of premises, for a total of 1,989½ Man Days.

Annual Meeting

A meeting of the Provincial Veterinary Inspectors was held at Red Deer, on January 23rd. 34 Inspectors and two other practicing Veterinarians were present. Dr. Saint and Dr. Allen, of the Federal Health of Animals Branch, attended. Our Department was represented by Mr. W. S. Baldwin, Drs. Ballantyne, Morrow and Best.

New regulations were explained and discussed, many questions regarding details of inspection of animals and the enforcement of regulations were asked and answered. Dr. Saint spoke of the Federal Regulations and Dr. Morrow on Brucellosis and Vibriosis.

CLASS "D" STOCKYARDS

Total Inspected

Market	Inspected	Passed	Rejected
Market "A"	11,626	11,109	517
Market "B"	4,962	4,810	152
Market "C"	36,685	36,141	544
Market "D"	23,453	22,501	952
Market "E"	6,010	5,827	183
Market "F"	7,295	6,960	335
Market "G"	15,724	14,652	1,072
Market "H"	32,626	30,902	1,724
Market "I"	23,411	22,420	991
Market "J"	16,650	16,138	512
Market "K"	19,848	19,538	310
Market "L"	39,649	38,554	1,095
Market "M"	78,352	76,719	1,633
Market "N"	45,050	43,549	1,501
Market "O"	4,105	3,892	213
Market "P"	8,147	7,975	172
Market "Q"	14,927	14,277	700
Market "R"	1,911	1,845	66
Market "S"	10,544	10,035	509
Market "T"	22,357	21,580	777
Market "U"	25,339	24,415	924
Market "V"	4,994	4,682	312
Market "W"	78	78	0
Market "X"	508	505	3
Market "Y"	1,123	1,110	13
Market "Z"	1,162	1,141	21
Market "XX"	2,312	2,235	77
Market "XXX"	2,992	2,859	133
Market "YY"	14	14	0
Market "YYY"	3,417	3,272	145
Totals	465,271	449,685	15,586

Percentage Rejected—3.35

CLASS "D" STOCKYARDS
Cattle Inspected

Market	Total Inspected	Total Passed	Total Rejected	Sent Home	Sent For Slaughter
Market "A"	2,185	2,117	68	21	47
Market "B"	776	759	17	8	49
Market "C"	11,434	11,368	66	31	35
Market "D"	5,937	5,861	76	46	39
Market "E"	4,108	3,963	145	14	131
Market "F"	3,755	3,624	131	4	127
Market "G"	5,319	5,208	111	108	3
Market "H"	17,959	17,128	831	19	812
Market "I"	6,720	6,467	253	42	211
Market "J"	5,606	5,542	64	39	25
Market "K"	19,848	19,538	319	20	290
Market "L"	10,071	10,048	23	5	18
Market "M"	18,001	17,628	373	106	267
Market "N"	20,928	19,794	1,134	18	116
Market "O"	985	960	25	24	1
Market "P"	3,745	3,695	50	2	48
Market "Q"	2,343	2,278	65	28	37
Market "R"	618	618	0	0	0
Market "S"	2,435	2,316	119	7	112
Market "T"	8,329	8,192	137	22	115
Market "U"	3,997	3,886	110	164	56
Market "V"	2,650	2,581	69	2	67
Market "W"	1,074	1,074	0	0	0
Market "X"	43	42	1	0	1
Market "Y"	1,043	1,030	13	0	13
Market "Z"	750	729	21	0	21
Market "XX"	1,331	1,306	25	2	23
Market "XXX"	1,274	1,261	13	9	4
Market "YY"	70	70	0	0	0
Market "YYY"	16	3	13	1	12
Totals	163,349	159,086	4,263	632	3,631

Percentage of Cattle Rejected—2.61%
Percentage of Rejected Cattle Sent Home—14.9%
Percentage of Rejected Cattle Sent For Slaughter—85.1%

CLASS "D" STOCKYARDS
Causes For Rejection
Cattle

Disease	Number	Per Cent
Section 18	2,753	64.58
Grade Bulls	291	6.83
Mastitis	265	6.21
Enteritis	144	3.38
Lump-jaw	151	3.54
Ringworm	143	3.35
Pneumonia	136	3,19
Cancer-eye	107	2.51
Warts	48	1.13
Pink-eye	28	0.66
Lice	24	0.56
Footrot	18	0.42
Brucellosis	17	0.39
Abscess	16	0.38
Navel Infection	16	0.38
Arthritis	15	0.35
Metritis	10	0.23
Septicemia	9	0.21
Dermatitis	8	0.19
Shipping Fever	7	0.16
Mange	4	0.09
Others	53	1.24

NOTE:

Section 18 refers to cattle marked for "Slaughter Only" because owner refused to have animals blood tested for Brucellosis.

CLASS "D" STOCKYARDS

Swine Inspected

Market	Total Inspected	Total Passed	Total Rejected	Sent Home	Sent For Slaughter
Market "A"	9,380	8,931	449	449	0
Market "B"	4,159	4.024	135	129	6
Market "C"	15,592	15,152	440	300	140
Market "D"	16,050	15,174	876	829	47
Market "E"	1,719	1,681	38	31	7
Market "F"	3,398	3,194	204	193	11
Market "G"	10,103	9,153	950	941	9
Market "H"	13,628	12,741	887	832	55
Market "I"	16,400	15,662	738	733	5
Market "J"	10,794	10,347	447	405	42
Market "K"	0	0	0	0	0
Market "L"	28,508	27,495	1,013	990	23
Market "M"	57,936	56,732	1,204	1,198	6
Market "N"	21,508	21,142	366	366	0
Market "O"	2,953	2,765	188	178	10
Market "P"	3,991	3,869	122	97	25
Market "Q"	12,465	11,830	635	630	5
Market "R"	1,293	1,227	66	63	3
Market "S"	7,804	7,414	390	378	12
Market "T"	13,314	12,675	639	627	12
Market "U"	21,146	20,332	814	692	122
Market "V"	2,284	2,041	253	227	16
Market "W"	2,171	2,171	0	0	0
Market "X"	449	447	2	2	0
Market "Y"	66	66	0	0	0
Market "Z"	408	408	0	0	0
Market "XX"	946	894	52	47	5
Market "XXX"	1,698	1,578	120	106	14
Market "YY"	8	8	0	0	0
Market "YYY"	143	11	132	122	10
Totals	280,314	269,164	11,150	10,565	585

Percentage of Swine Rejected—3.98%
Percentage of Rejected Swine Sent Home—94.75%
Percentage of Rejected Swine Sent For Slaughter—5.25%

CLASS "D" STOCKYARDS

Causes For Rejection

Swine

Disease	Number	Per Cent
Rhinitis	6,437	57.73
Mange	2,003	17.96
Pneumonia	795	7.13
Dermatitis	524	4.70
Grade Boars	417	3.74
Enteritis	381	3.42
Erysipelas	332	2.98
Arthritis	118	1.06
Glasser's Disease	49	0.44
Swine Pox	27	0.24
Worms	21	0.19
Lice	16	0.14
Others	30	0.27

Sheep—Total Inspected—15,182—Total Rejected—161 = 1.06%

Horses—Total Inspected— 6,414—Total Rejected— 12 = 0.19%

CLASS "E" STOCKYARDS

Report of Cattle Inspected

Stockyard	Passed	Owner's Premises	Marked For Slaughter Only Diseased	Section 18	Grade Bulls	Total Inspected
E—1	7,860	1	56	......	33	7,896
E—2	10,690	......	42	14	......	10,746
E—3	10,428	49	124	11	......	10,612
E—4	8,340	11	54	......	......	8,405
E—5	16	......	......	......	......	16
Totals	37,280	61	276	25	33	37,675

Number of Animals Rejected 395 (1.05%)

Causes For Rejection

Cancer-eye	94 (23.8 %)
Lump-jaw	80 (20.3 %)
Ringworm	44 (11.14%)
Warts	42 (10.6 %)
Grade Bulls	33 (8.4 %)
Pink-eye	26 (6.6 %)
Section 18	25 (6.3 %)
Mastitis	21 (5.3 %)
Other Conditions	30 (7.6 %)

NOTE:

Section 18 refers to cattle marked for "Slaughter Only" because owner refused to have animals blood tested for Brucellosis.

CLASS "F" STOCKYARDS

Report of Cattle Inspected

Stockyard	Number Passed	Number Rejected & Returned To Owner's Premises	Marked For Slaughter Only Diseased	 Section 18	 Grade Bulls	Total Inspected
F—1	829	......	1	7	......	837
F—2	2,279	3	16	......	......	2,298
F—3	2,275	......	20	......	......	2,295
F—4	2,235	11	3	......	......	2,249
Totals	7,618	14	40	7	......	7,679

Number of Animals Rejected .... 61 (.79%)

Causes For Rejection

Lump-jaw	17 (27.8 %)
Cancer-eye	15 (24.6 %)
Ringworm	8 (13.1 %)
Section 18	7 (11.5 %)
Warts	3 (4.9 %)
Worms	3 (4.9 %)
Abscess	3 (4.9 %)
Other Conditions	5 (8.2 %)

NOTE:

Section 18 refers to cattle marked for "Slaughter Only" because owner refused to have animals blood tested for Brucellosis.

EXTENSION

Extension activities under the direction of Dr. J. G. O'Donoghue, were concerned with both the dissemination of information and the assessment of current veterinary problems in the field. The duties included two lecture courses and one part-term laboratory course at the University of Alberta, lectures at the Olds and Vermilion Schools of Agriculture, investigational and service trips and participation in disease control programs. All members of the veterinary staff contributed to extension work during the year.

Investigational and Service Calls

Cattle	45
Swine	66
Sheep	4
Mink	18
Wildlife	4
Total	137
Meetings	41
Lectures	95
Distemper	16

Vital Statistic Reporting

Since 1957, the development of a satisfactory method for the compilation of morbidity and mortality statistics on animal disease conditions in Alberta has been a major project. Information gathered from laboratory submissions and personal contact with practicing veterinarians and livestock owners does not always reflect the true significance of an individual disease nor the total disease loss.

All the problems were not solved, but the present system of reporting, in which statistic tear sheets are incorporated in billing invoices of practicing veterinarians proved satisfactory. As of December 1959, twenty-five of sixty veterinary practices in Alberta were reporting, and for the year, information was gathered from professional calls to 8,666 individual premises, representing 28,738 animals requiring veterinary attention. Additional data is reported under the General heading.

Swine Inspections

As required by the regulations governing the Advanced Registry Assistance Bonus, 34 purebred swine premises were inspected. One premise was rejected and provisional approval only was granted in four instances.

The premises of origin of swine nominated for the Royal Winter Fair were inspected for atrophic rhinitis.

Industrial Hazards

In response to specific requests, investigations into the possible ill-effects suffered by domestic stock from industrial exhausts in the Medicine Hat and Pincher Creek districts were carried out. The latter is continuing. Results were forwarded to the Department of Public Health officials, who were actively engaged in work on this subject.

Swine Film

A twenty-minute sound color film on swine diseases, "The Little Pig Went To Market" prepared for showing to producer groups was completed.

General

It was again necessary to maintain close observation of disease outbreaks on several premises, as well as supervising treatment or control meaures on a trial and error basis. This is the result of the present incompleteness of knowledge concerning diseases or disease conditions that exist in the Province. In addition, animals were purchased for experimental purposes in the study of current problems.

For statistical purposes, disease conditions were classified under the four basic categories of Nutritional, Parasitic, Infectious and Miscellaneous. The following table shows the relative importance of each in the different types of domestic stock.

	Nutritional	Parasitic	Infectious	Miscellaneous
Cattle	12%	2%	37%	49%
Swine	23%	20%	50%	7%
Sheep	18%	62%	12%	8%
Horses	4%	8%	49%	39%

It is not yet possible to state accurately the annual economic loss from disease in the Province. Information available indicates that it is considerable and to a large degree preventable.

(a) Cattle

In order of importance; disease conditions causing the greatest economic loss:

1. Respiratory diseases
2. Clostridial diseases
3. Mastitis
4. Nutritional deficiencies

The Extension Veterinarian attended an interstate conference on Pulmonary Emphysema held at Sheridan, Wyoming, in September. Pulmonary Emphysema is not uncommon in Alberta and can result in serious loss to an individual cattle owner. The etiology of the condition remains unknown.

(b) **Swine**

In order of importance, disease conditions causing the greatest economic loss:

1. Erysipelas
2. Nutritional deficiencies
3. Gut Oedema
4. Glasser's

Infectious diseases, apparently of recent introduction and atrophic rhinitis were creating a severe hazard to purebred and commercial swine producers. These diseases are usually introduced with purchased breeding stock. Four purebred breeders were forced to depopulate their herds in 1959.

(c) **Sheep**

In order of importance, disease conditions causing the greatest economic loss:

1. Parasites
2. Nutritional deficiencies
3. Clostridial diseases
4. Respiratory diseases

(d) **Horses**

Equine Encephalomyelitis

One case was reported in 1959.

(e) **Mink**

1. Distemper

Fifteen ranches were quarantined for distemper.

2. Virus Enteritis

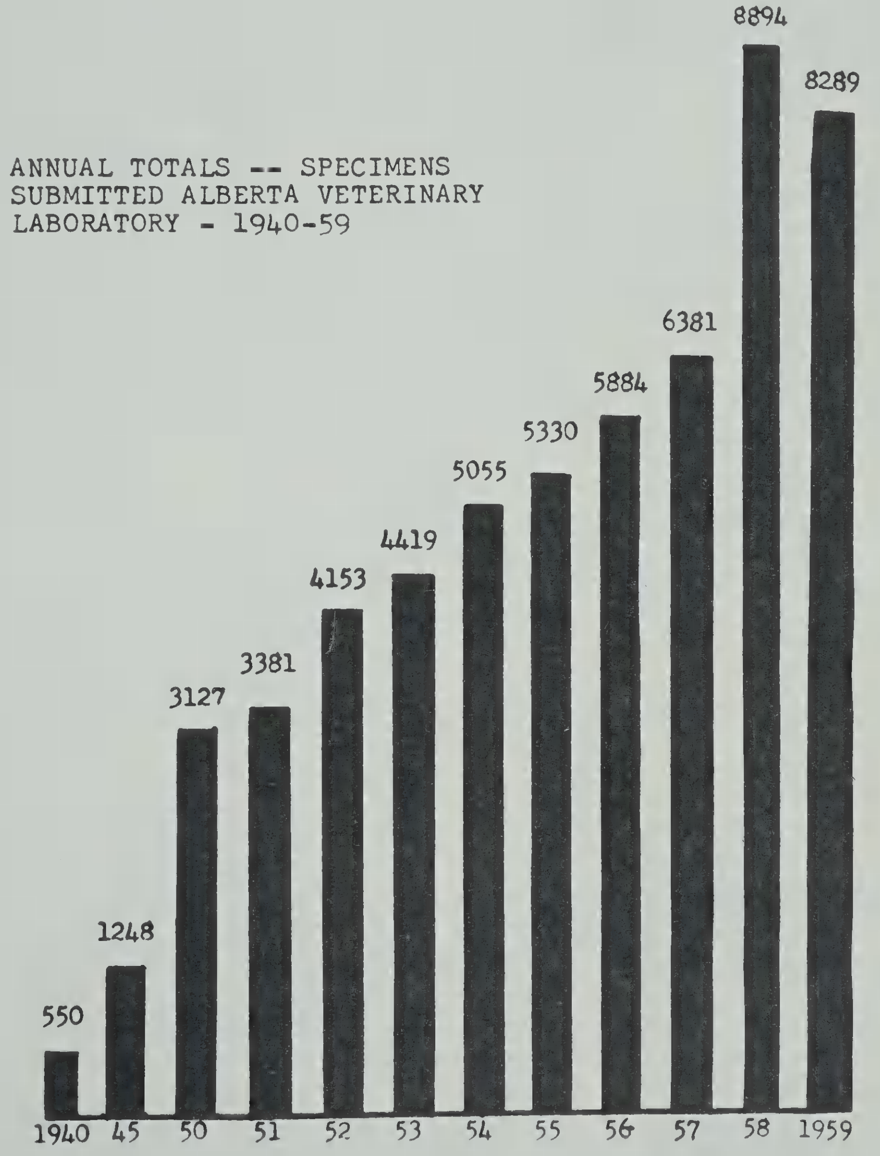
Alberta remains free of this virus disease, that is prevalent in Ontario and Manitoba, and has occurred in British Columbia and parts of the United States. The regulations governing the importation of mink were expanded to lessen the likelihood of its introduction.

ANIMAL DISEASE SECTION

Dr. G. S. Wilton, assisted by Dr. H. N. Vance, directs the activities of this section. The main function of the section was to provide diagnostic facilities and services which are not available in the field. This provided the livestock industry in the Province with a central diagnostic unit which can do the complete bacteriological, serological, and pathological examinations necessary for an accurate diagnosis.

This section is also responsible for laboratory testing of bloods for brucellosis (29,090 in 1959) and filling orders for vaccine and supplies under the calfhood vaccination program.

The accompanying chart shows the continuious increase in the number of specimens being submitted to the laboratory. The steady rise in the annual totals was interrupted only by the marked peak of 1958, and there has been a like increase in the number of livestock producers served. The work attending this increase in submissions has been handled by essentially the same number of staff members for six years, the only change being two full time pathologists in 1959 instead of one full time and one half time as there had been since 1953.



The specimen table below shows that the largest percentage of specimens examined are from cattle and swine. However, a very wide range of animals are examined during the course of a year, including many sheep and horses, along wtih native wildlife, zoo and pet species.

	Live	Dead	Portions	TOTALS
Swine	210	685	2,524	3,419
Cattle	19	227	1,836	2,082
Dog	3	93	298	394
Mink	41	254	6	301
Sheep	11	30	100	141
Chinchilla	4	62	1	67
Deer	....	4	58	62
Cat	3	27	30	60
Coyote	....	9	40	49
Guinea Pig	4	44	....	48
Horse	....	2	38	40
Moose	1	....	36	37
Rabbit	3	11	8	22
Rat	17	2	2	21
Muskrat	....	17	....	17
Elk	....	....	9	9
Monkey	....	2	6	8
Nutria	....	7	....	7
Antelope	4	2	....	6
Caribou	....	3	3	6
Gopher	....	6	....	6
Hampster	2	4	....	6
Wolf	....	....	6	6
Tapir	....	....	5	5
Beaver	....	4	....	4
Kangaroo	....	....	4	4
Bighorn Sheep	....	....	3	3
Anteater	....	....	2	2
Bear	....	....	2	2
Squirrel	1	1	....	2
Buffalo	....	....	1	1
Fish	....	1	....	1
Fisher	....	1	....	1
Fox	....	....	1	1
Groundhog	....	1	....	1
Llama	....	1	....	1
Mouse	....	1	....	1
Mule	....	....	1	1
Reindeer	....	1	....	1
Wolverine	....	1	....	1
Woodchuk	....	1	....	1
Milk Samples	....	....	....	592
Blood Samples	....	....	....	224
Tampons	....	....	....	166
Water Samples	....	....	....	125
Feed Samples	....	....	....	101
Fecal Samples	....	....	....	100
Urine Samples	....	....	....	30
Semen Samples	....	....	....	19
Miscellaneous	....	....	....	85
TOTALS				8,289

Blood Testing

A total of 29,090 blood tests were conducted in our laboratory this year. In addition, 468 serum samples were sent to the Ontario Veterinary College for vibrionic abortion tests, and 455 samples were forwarded to the Provincial Public Health Laboratory for leptospira testing. The brucellosis blood test results appear in the section on brucellosis control.

Milk Samples

A total of 592 milk samples were examined for evidence of mastitis and/or brucellosis. In many cases where there was evidence of mastitis, tests were carried out to determine what drugs would be most effective against the organism isolated.

Meat Samples

The lack of abattoir inspections and/or veterinary services in many parts of Alberta results in a number of meat samples being submitted to the laboratory to determine their fitness for human consumption. The dairy branch submitted many of these samples. There were 109 samples examined and 33 were found unfit for human consumption.

Toxicology

We are indebted to the Provincial Analyst and his staff for examining a total of 461 specimens from this section during 1959. Most of these specimens were animal tissues or stomach contents where poisoning was suspected. In addition to this many well waters were analyzed to check on their fitness for human or farm animal consumption, and a number of feed samples were examined for the presence of nitrates, cyanide or other harmful substances. The Soil and Feed Testing Laboratory of the Faculty of Agriculture of the Unviersity also assisted with the latter.

Wildlife Specimens

This section cooperates closely with the Game Branch in checking on disease conditions in game animals and other wildlife. Specimens were also submitted by hunters seeking advice on the suitability of game meats for human consumption. Cooperation was given in disease problems of the Alberta Game Farm, and a number of their specimens were examined. Other specimens were submitted by veterinarians, zoologists, and Federal and Provincial officials interested in wildlife diseases. A total of 214 specimens from 17 species were examined.

Other Activities

We also assisted in the extension program by addressing various short courses and meetings of livestock groups. During the past year the two pathologists addressed seven meetings and carried out 27 disease investigations on farm premises. Four articles were prepared for farm publications and three radio and one television interviews made.

Two scientific papers were prepared for publication in veterinary journals.

Disease Conditions

Since the laboratory services farms in all areas of the province, a review of our findings gives us a general picture of the major disease problems. The advent of the branch's vital statistics program should give information of a wider scope, however, and would include diseases from which the laboratory is not likely to receive specimens. A few of the more prominent problems are discussed below.

Cattle

Clostridium infections (Clostridium perfringens, blackleg, malignant oedema) continued to be the most commonly diagnosed disease. About 150 Clostridium perfringens infections or toxemias were diagnosed, and it appears that this disease was becoming a major problem, especially in feedlot cattle. Three field trials using various immunizing agents, were undertaken during the past year but results on these trials have not yet been finalized. Lack of knowledge of proper vaccination procedures continues to result in unnecessary losses from blackleg and malignant oedema.

Despite very wide-spread use of antibiotic ointments for the treatment of mastitis, the number of cases submitted to this laboratory nearly doubled during the past year. Pneumonia, mostly of the shipping fever type, continued to be a problem.

In diseases caused by faulty nutrition, Vitamin A deficiency continued to be troublesome with 25 cases being diagnosed. Less obvious vitamin A deficiencies were probably more numerous and may be in part responsible for some of the infectious diseases.

Two relatively new diseases continued to cause trouble during the past year; pulmonary emphysema was found in specimens from 14 premises while mucosal disease was found on 8 premises.

A careful surveillance for evidence of leptospirosis was maintained and several field trips were taken to investigate possible cases of this infection. Though it causes serious trouble in the U.S., we have not yet definitely confirmed diagnosis of this infection in Alberta.

Swine

The most frequently diagnosed infectious disease in swine during the past year was pneumonia. The Pasteurella bacteria were found in many of these cases and the combined total was 335 affected premises. A very large number of oedema disease cases were diagnosed during the past year with 151 premises being affected. Unfortunately, we do not have sufficient knowledge of this disease at present to carry out really effective control. There was a slight reduction in the number of cases of swine erysipelas with 85 being diagnosed during the past year. Glasser's disease (60 cases) continued to be one of the serious disease problems facing swine producers. Other infectious diseases diagnosed were atrophic rhinitis with 20, and Salmonella infections with 31.

Faulty feeding was probably the single largest factor in disease losses again last year. Nutritional gastro-enteritis was found on 114 premises and was probably basically responsible for diseases in a great many other cases. Surprisingly enough, almost 50 cases of nutritional anemia were found despite the fact that a few simple steps can prevent this disease effectively. Vitamin A deficiency was found on 40 premises, and necrotic enteritis on 25.

Baby pig disease or transmissable gastro-enteritis, which caused such severe losses during the fall and early winter of 1958, has not reappeared in serious proportions this year, with only 5 cases being diagnosed.

Sheep

Enterotoxemia, with 33 cases, along with pasteurella infections (21) and vitamin A deficiency (10) were the common diseases in sheep.

Mink

The most serious disease affecting mink continued to be distemper with 16 premises quarantined for this disease during 1959. Again, due to misconceptions regarding the use of vaccine, losses occurred which could have been prevented. Avian tuberculosis caused fairly heavy losses on one ranch and was found to be affecting mink on several others. Urinary calculi caused heavy losses on one ranch, and salmonella infections were found in 25 cases. Another disease which seems to be more prominent in recent years is "Aleutian Disease", which caused fairly heavy losses on one ranch and was seen on several others.

Other Species

Considerable number of dog specimens were examined, the most common afflictions being distemper, strychnine and arsenical poisoning and infectious canine hepatitis. Dietetic disorders and listeria infections were common causes of losses in chinchillas. In cats, feline enteritis was the main cause of losses.

MICROPATHOLOGY SECTION

This section, under the direction of Dr. F. E. Graessar, functions primarily as an important adjunct to the diagnostic facilities provided by the laboratory. Tissues submitted by the animal and poultry pathologists, as well as those received from practising veterinarians, were processed, sectioned, suitably stained, and examined microscopically. The findings were recorded and written reports returned to the appropriate sources.

Characteristic pathological changes were produced by many disease conditions, and an accurate diagnosis depends largely upon their recognition. Frequently, such changes were detected only by microscopical examination of selected tissues or organs. Histopathological examination was of particular value in the diagnosis of such virus conditions as distemper in mink and dogs, infectious canine hepatitis, virus pneumonias, rabies, etc. In other cases it often provided the only means of differentiating between diseases which, while clinically and grossly similar, were actually separate disease entities. Neoplastic conditions were encountered with some frequency, and a histological examination was called for to determine the type of growth, and whether or not there was any indication of malignancy.

A restricted photographic service was made available to the professional staff of the Branch. Photographs of specimens, cases, charts, etc., were taken on request, and prints or slides prepared to illustrate scientific papers or for extension purposes. Also, gross specimen mounts for display and educational use were prepared and maintained. Another responsibility of this section was the ordering of all laboratory supplies and equipment, and preparation of the annual inventory.

1. Histopathological Sectioning

The total number of tissues processed during the year amounted to 2,403. From these, approximately 2,700 slides were prepared and examined microscopically. The following table (Table I) is presented to show the species of origin and the number of submissions from each. Additional tables are presented to indicate the nature of the tissues examined and the pathological conditions which were encountered.

TABLE I

DOMESTIC ANIMALS	
Bovine	281
Canine	327
Equine	12
Feline	44
Porcine	498
Ovine	44
Miscellaneous	37
TOTAL	1,243
POULTRY	
Chicken	637
Turkey	90
Miscellaneous	95
TOTAL	822

FUR-BEARING ANIMALS AND MISCELLANEOUS SPECIES

Mink	269
Miscellaneous	69
TOTAL	338
GRAND TOTAL	2,403

A slight decrease, approximately 6%, was apparent in this phase of the work accomplished from the previous high established in 1958. Table II depicts, by year, the number of tissues processed during the past five years.

TABLE II

TISSUES PROCESSED SINCE 1955

	1955	1956	1957	1958	1959
Domestic Animals	589	712	843	1,426	1,206
Fur-Bearing Animals	218	233	281	160	269
Poultry	303	463	726	838	822
Miscellaneous	35	82	120	136	106
TOTAL	1,145	1,490	1,970	2,560	2,403

Outbreaks of disease in several mink ranches resulted in an increase in the number of fur-bearing animal submissions. A total of 151 mink bladders were examined, of which 34 showed virus inclusion bodies indicative of distemper.

The number of neoplasms (tumours) examined amounted to 146—exclusive of the leukosis complex in chickens. Of these, 96 (approx. 66%) proved to be malignant.

In conjunction with the Poultry Section, project work in connection with Psittacosis and Avian Infectious Hepatitis was commenced. Also, the preparation of a series of histological sections was undertaken for reference and study purposes.

In collaboration with Drs. O'Donoghue and Whenham, a paper was published describing "A Glasser's-like Syndrome in Alberta Swine". A case report on "Fibro-sarcomata in Two Mute Swans", prepared in collaboration with Dr. H. C. Carlson, was written and submitted for publication.

A three day short course on the pathology and diagnosis of virus enteritis in mink was attended at the Ontario Veterinary College in April.

Also attended was the Animal and Poultry Disease Pathology Conference held at Hull, Quebec, in July.

2. Preparation of Material for Extension Purposes

A considerable increase in the amount of photographic material prepared was noted over the previous year. Approximately 120 photographic prints were produced for purposes of reference and to illustrate scientific papers. Over 200 colour transparencies were made to be added to the series of slides on animals and poultry diseases. Included in this number was a series on the veterinary aspects of Civil Defence, which was photographed from material prepared by the Director of Veterinary Services.

Repairs to containers and replacement of fluid in 15 display specimens were effected.

BACTERIOLOGY SECTION

During 1959, Dr. G. R. Whenham was placed in charge of all bacteriology at the laboratory. Technical staff under his supervision consists of Mrs. E. Henningsen, Mr. J. Bacle, Mr. J. Wood (half time) and Mrs. R. Aksel (half time). This section is charged with the responsibility of all routine bacteriology of a diagnostic nature, special bacteriology as required, diagnostic virology, special serology, and certain clinical laboratory techniques.

Routine Bacteriology

A total of 8,285 specimens was cultured during the year, of which 3,439 were submitted by the animal pathology department and 4,846 by the poultry pathologists. Two hundred and thirty-three feti were examined for reproductive diseases and a bacterial cause for abortion was found in 40. 592 milk samples were examined for mastitis during 1959.

About 250 clinical laboratory tests were performed. which included blood counts, urinalysis and parasitic ova examinations.

The section manufactures its own media, and during the year used approximately 35,000 plates of solid medium and 250,000 millilitres of liquid and other media.

Special Bacteriology Projects

(1) A pilot program of examination of fluff samples, to assess hachtery fumigation and sanitation, was conducted in co-operation with the Poultry Commissioner in preparation for a more widespread program during the 1960 hatching season.

(2) The section co-operated with the Game Branch on a project to determine suitable methods of preserving game meat, to reduce spoilage and wastage.

(3) A survey was begun to investigate the possible presence of avain vibrionic hepatitis in Alberta. The disease was found to exist in several poultry flocks and examination for this infection will be placed on a routine basis. Study of the disease is progressing.

(4) Examination of intestinal contents for the presence of Clostridial toxins was made on 43 samples during the year.

Virology

During 1959, virological examinaitons at this Laboratory became routine for certain diseases. A total of about 50 specimens was examined during the year by various procedures, and diagnoses of infectious bronchitis, avian encephalomyelitis and psittacosis were made in several instances.

Special Serology

(1) The section tested 229 samples of cervico-vaginal mucus by agglutination for evidence of bovine vibriosis, which was indicated from 18 premises, using this method. In one case, follow-up work showed the bull to be infected and probably acting as a source of continuing infection in the herd. Tampons for the collection of mucus samples were made by the staff of the section, and 382 were sent to practitioners during the year.

(2) "Q" fever testing of livestock in the Province was conducted here using the capillary agglutination test. 1,878 serum samples were tested and agglutination was evident in 57 of them. Follow-up work on two reacting herds was being conducted to determine whether active infection is present in the animals.

(3) Other serological tests done by the section consisted of hemagglutination inhibition tests on 442 avian sera for PPLO and 32 avian sera for Newcastle disease. 96 avian sera were tested for pullorum disease.

Experimental animals used during the year totalled about:

Guinea Pigs	400
Mice	250
Rabbits	7
Chicks	50

Vaccines

Autogenous vaccines and bacterins were manufactured in the section to help control certain diseases. During the year, approximately 45,000 ml. of various bacterins and 14,000 ml. of vaccines were made and forwarded to veterinary practitioners for their use for special conditions.

Other Activities

In collaboration with other staff members, the following papers were written and submitted for publication:

"A Glasser's-like Syndrome in Alberta Swine"—O'Donoghue, Whenham, and Graesser.

"Pullorum in Turkeys—Experimental Testing in Natural Infection"—Bigland, Carlson, and Whenham.

Several disease investigational trips were taken; the figures appear elsewhere, and one short course was attended at which a talk was presented. In addition, visits were made to the Animal Disease Research Institute at Hull, Quebec, and the Ontario Veterinary College at Guelph, to discuss bacteriological and virological problems and examine their laboratory facilities and techniques.

POULTRY DISEASES SECTION

This section was responsible for the accurate diagnosis of poultry diseases. Specimens for diagnosis were received from all points in Alberta, submitted by veterinarians, farmers, hatcherymen, feed manufacturers and others connected with the poultry industry. The section employed two veterinary pathologists, Dr. C. H. Bigland and Dr. H. C. Carlson. In addition, Dr. G. R. Whenham assisted in the advanced microbiological diagnostic work. Dr. Bigland left the section on October 1st on a one year's leave of absence to undertake post-graduate study toward a Master of Science degree in the Faculty of Medicine, University of Alberta.

During the past seven years, this section of the laboratory examined 25,965 chickens and 13,721 turkey specimens. This includes birds of these species of all ages. The following tables illustrate by percentages, the various diseases or groups of diseases that caused the death of all of the chickens and turkeys examined during the past seven years.

Chickens:

Respiratory Tract Infections	16.19%
Miscellaneous Diseases	14.19%
Salmonella Group	12.08%
Deficiencies and Improper Feeding	9.32%
Leukosis	7.71%
Kidney Derangements	7.24%
Poisonings	6.76%
Avian Tuberculosis	4.93%
Coccidiosis	4.80%
Omphalitis	4.66%
Chilling/Overheating	2.81%
Other Infectious Diseases	2.44%
Metabolic Diseases	2.04%
Cannibalism	1.92%
Fowl Cholera	1.78%
Reproductive Derangements	1.01%
Tumors Other Than Leukosis	.54%

"Miscellaneous Diseases" in this table represents a large number of conditions such as deformities, injuries, gross parasite infestation, etc. "Other Infectious Diseases" refer to a group of 18 infectious conditions that were observed including encephalomyelitis, infectious hepatitis, enterohepatitis and infectious synovitis.

Turkeys:

Omphalitis	20.17%
Salmonella Infections	19.69%
Deficiencies and Improper Feeding	12.29%
Respiratory Diseases	9.14%
Miscellaneous Diseases	8.39%
Poisonings	6.80%
Ascites and Oedema	5.99%
Metabolic Diseases	4.89%
Other Infectious Diseases	4.38%
Coccidiosis	3.49%
Enterohepatitis	2.96%
Cannibalism	1.74%
Erysipelas	.56%

"Miscellaneous Diseases" in this table represents a large number of diseases that were observed including injuries, deformities and parasite infestation. "Other Infectious Diseases" refers to aspergillosis, fowl cholera, hexamitiasis, and staphylococcic arthritis.

An examination of these figures reveals that the greatest disease problem in the chicken flocks over this period was from diseases infecting the respiratory tract. These figures also illustrate that almost 10% of all the birds examined were showing evidence of deficiencies and improper feeding.

In the turkey flocks, the figures illustrate that the greatest single disease problem were the Salmonella infections which were dominated by paratyphoid infections. Here again, as in the chickens, deficiencies and improper feeding accounted for a high percentage of the losses.

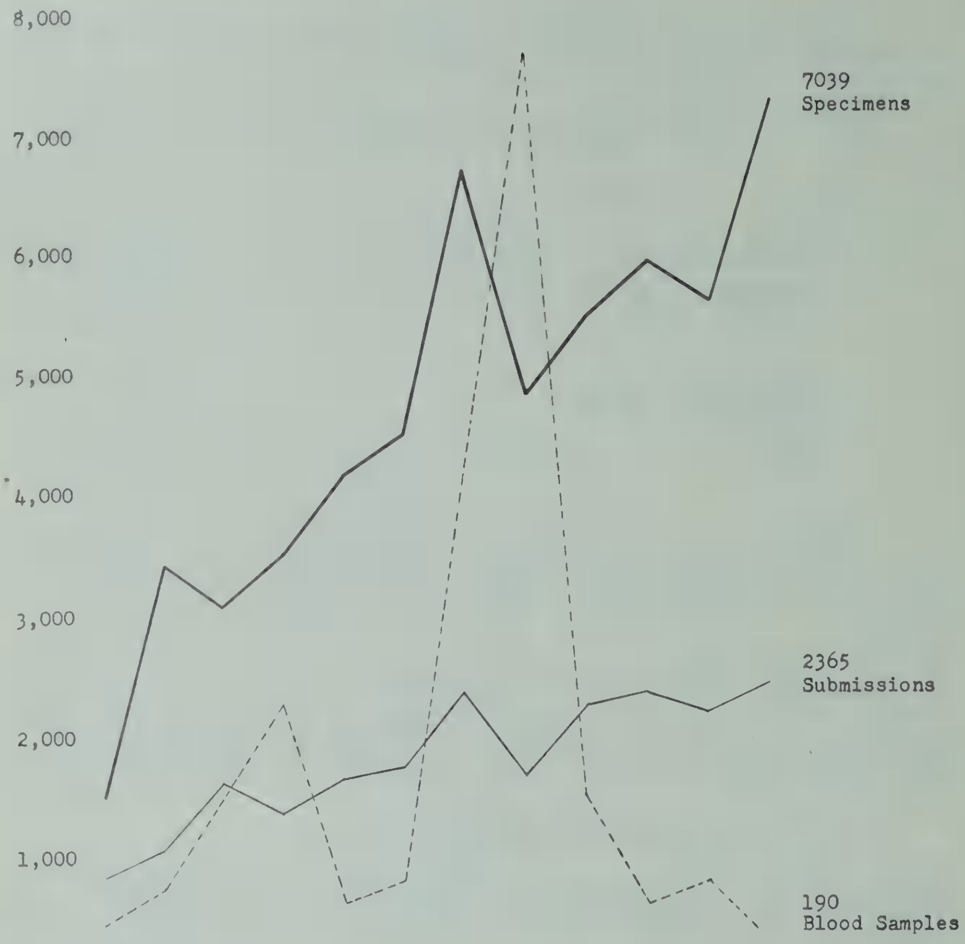
Disease was recognized as one of the greatest threats to successful poultry production. Accurate diagnosis and speedy dissemination of this information is essential to such control. Disease prevention is of the utmost importance and this is stressed by the personnel in all letters, telegrams, bulletins, personal contacts and meetings.

The accompanying graph illustrates the increasing volume of work handled by the poultry disease section over the past eleven years.

Approximately 200 primary disease conditions were encountered in the specimens examined. By use of ante-mortem, post-mortem examination and bacteriological, serological, virological and other laboratory techniques, a diagnosis was established and the information was given to the veterinarian, the owner or his agent, together with recommendations for treatment, control or prevention.

Poultry Disease Picture

Alberta poultry escaped any single widespread epidemic of disease in 1959. The only marked increase on the otherwise fairly normal disease picture was seen in the increased paratyphoid infections in turkey poults. Most of this was traced to birds imported from the United States. One hundred and seven cases of paratyphoid were diagnosed in turkey flocks as compared with 75 cases in 1958.



POULTRY - (1947-1959)

As in past years, many poultry losses appear to be due directly or indirectly to faulty feeding, management and sanitation. The majority of such losses occurred in the small "farm flocks" as larger poultry operators pay more attention to these factors.

Detailed statistics on disease conditions are included in the report of the Veterinary Services Branch. However, the following conditions were considered worthy of special attention.

Newcastle Disease

No cases of Newcastle disease were diagnosed during the year. There was no epizootic of Newcastle disease in Alberta since 1954 although little vaccination against this condition was done.

Infectious Bronchitis

With the provision of virological facilities at the laboratory under the supervision of Dr. Whenham, we had the opportunity of making a more confirmatory diagnosis of this condition in the poultry flocks. The diagnostic techniques involved in this work was under review during the past year by the virological section and it is hoped that in future years, these diagnostic techniques will be able to be applied more effectively to the diagnosis of this condition.

Infectious bronchitis was diagnosed and confirmed in 2 laying flocks. The outbreaks result in a rapid spreading respiratory infection, cessation of egg production and lowered production upon recovery, 6 to 8 weeks later.

An unidentified respiratory infection occurred in 143 flocks of baby chicks which was thought to be wholly or partly due to infectious bronchitis.

Chronic Respiratory Disease

The diagnosis of chronic respiratory disease (CRD) was based on positive PPLO culture, PPLO haemagglutination-inhibition blood testing and a typical clinical picture. One hundred and forty-seven cases of CRD were diagnosed in 1959 from 55 farms which was approximately the same as in 1958. Aside from blood samples submitted for PPLO testing, 441 blood samples from routine cases suspected of being CRD were examined. Of these, 187 were positive, 201 were negative and 53 suspicious. PPLO cultural examination was also attempted on 163 suspected cases, 76 of these were negative, 73 were positive and 14 suspicious. Of suspected cases submitted to both the PPLO cultural examination and HI test, 67 were positive to both cultural and HI, while 60 were negative to both culture and HI.

Leukosis

Leukosis was diagnosed in 310 cases from 142 premises during 1959. This disease continued to be the largest single poultry killing disease in the province.

Avian Tuberculosis

Next to leukosis, this continued to be the largest poultry killing disease in the province. This disease was costing Alberta poultrymen, hog raisers, and the consuming public, many thousands of dollars annually. Avian tuberculosis was diagnosed in 158 birds from 104 farms in 1959, compared to 147 birds from 117 farms in 1958.

Paratyphoid

Paratyphoid infections continued to be a major problem particularly in turkey poult flocks. Much of this year's paratyphoid infection was traced to turkey hatching eggs imported from the states of California and Oregon. One hundred and forty-eight cases, compared with 96 cases in 1958, were diagnosed in 1959. Each isolation of paratyphoid organisms was submitted to the Alberta Public Health Laboratory for typing. The following table gives the types isolated from poultry in 1959.

SALMONELLA PARATYPHOID ISOLATIONS—1959

S. heidelberg	89
S. thompson	15
S. typhi murium	11
S. newington	7
S. minnesota	3
S. newport	2
S. bareilly	2
S. derby	2
S. bredney	1
S. tennessee	1
Not typed	15
TOTAL	148

Pullorum

A decrease in the number of Salmonella pullorum isolations was found in 1959. This organism was isolated from 94 chickens, chicks and poults from 32 premises in 1959 compared with 229 specimens on 93 premises in 1958. A number of isolations were made from adult birds submitted for pullorum examination, following positive blood tests in the field.

Twenty-four chick flocks were infected with pullorum in 1958 compared with 38 chick flocks in 1958. Four poult flocks were infected in 1959 compared with 31 poult flocks in 1958. This was a considerable reduction from the number of specimens which revealed pullorum in 1958.

In order to check on prevailing strains of Salmonella pullorum so that testing antigens can be standarized, all such isolations were submitted to the Ontario Agricultural College for typing. The following table lists the typing of S. pullorum isolated in Alberta since 1950.

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Standard	22	34	70	58	86	34	65	46	61	17
Variant	2	5	39	21	48	10	28	8	10	10
Intermediate	9	7	11	30	9	31	0	1	7	1
Not Typed	0	0	0	0	0	10	4	3	8	5
TOTALS	33	46	120	109	143	85	97	58	86	33

Non-Pullorum Reactor Suspects

Post-mortem, bacteriological and serological examinations were made on 115 birds submitted by the Poultry Branch as birds showing a questionable reaction to the whole blood test for pullorum. Salmonella pullorum organisms were isolated from 21 birds or approximately 18% of the birds submitted.

Fowl Typhoid

This condiiton was diagnosed in chickens and turkeys from 18 farms in 1959, compared with 17 farms in 1958 and 19 farms in 1957. The majority of fowl typhoid isolations were made from birds originating again in the "fowl typhoid endemic" area, east of Edmonton, centering around Two Hills, Radway and Mundare.

Examination of Birds Under Random Sample Test

To assist the Random Sample Test and assure an accurate evaluation of the birds under examination, a post-mortem was conducted on all of the birds that died while undergoing the Random Sample Test. To assist in this program, 183 birds were examined from the 2nd and 3rd Random Sample Test. A detailed table of diagnoses by pen numbers for the Alberta Random Sample Test will be given in the report of the Veterinary Services Branch. In addition to the routine examination of the birds from this test, the birds dying on the premises of the University of Alberta Farm are routinely examined. Two hundred specimens were examined during 1959. This included 148 chickens, 26 turkeys and 25 turkey blood specimens.

Psittacosis

For the first time in the history of the province, a diagnosis of psittacosis was made in birds examined at the Poultry Diseases Section. Thirteen budgerigars and 1 Gouldian finch were found to be infected with psittacosis in the province in 1959. Twelve of these cases were from the Edmonton area and 2 cases from the Calgary area. The source of these outbreaks could be traced to birds imported from other provinces and from the United States. Although the infection in the province during 1959 appeared to be confined to birds of the psittacine group, the potentiality of this disease entering the turkey flocks of the province is great. The Poultry Disease Section established a liaison with the Alberta Department of Health in an effort to establish a control program on the importation of birds possibly infected with psittacosis into the province.

Other Disease Conditions

Avian encephalomyelitis—was diagnosed in 15 cases in 1959 compared with 14 cases in 1958 and 11 cases in 1957. Most of the cases occurred in broiler chicks. With the availability of virological techniques at the laboratory, it was possible to make a definite confirmatory diagnosis of this condition.

Dissecting aneurysm—was seen in 3 flocks of turkeys in 1959 compared with 1 flock in 1958 and 3 flocks in 1957. This condition causes sudden death by internal hemorrhages in turkeys and on occasions created quite a large mortality in the individual flock.

Round Heart Disease—a heart degeneration in chickens was diagnosed in 13 cases in 1959 compared with 21 cases in 1958 and 14 cases in 1957.

Infectious hepatitis—a liver condition in chickens was diagnosed in 10 flocks in 1959 compared with 1 flock in 1958 and 4 flocks in 1957. Extended laboratory work revealed that this infectious hepatitis is similar to the so-called avian vibrionic hepatitis which was endemic in eastern Canada and the eastern United States. Vibrio organisms were isolated from a number of these cases at the laboratory in the past year confirming that this condition was present in Alberta chicken flocks. Mortality in the disease in laying flocks may reach as high as 50% of the flock.

Staphylococcic arthritis—was diagnosed in 21 turkey flocks in 1959. This condition seems to be on the increase and in some flocks was a serious problem during the hot summer months of July and August. It is manifested by a swelling of the joints, particularly the hock joints and a severe lameness with the birds eventually going down and dying from starvation and dehydration. The Staphylococcic organism isolated from approximately one half of these cases proved to be very resistant to the more common antibiotics.

Extension

The annual Hatcheryman's Short Course sponsored by the Veterinary Services and Poultry Branches was addressed by two members of this section. Six field investigations of poultry disease problems were made. Lectures and demonstrations were given to a number of the persons attending the Poultry Inspector's Short Course given by the Poultry Branch. The Veterinary Mid-Winter Conference in Red Deer, the annual meeting of the Alberta Veterinary Medical Association in Edmonton and the annual meeting of the Canadian Veterinary Medical Association in Guelph, Ontario were attended. Dr. Bigland attended the Poultry Pathologists Conference held at Hull, Quebec under the sponsorship of the Animal Disease Research Institute of the Federal Department of Agriculture. Three appearances were made on television farm broadcast programs discussing poultry disease problems.

Scientific Presentations

Dr. C. H. Bigland in co-operation with Mr. R. H. McMillan of the Poultry Branch published a paper entitled "Tracing of Outbreaks of Pullorum in Turkeys in Alberta", in the Canadian Journal of Comparative Medicine. In addition, Dr. Bigland in co-operation with Mr. G. J. Mitchell of the Game Branch of the Department of Lands and Forests published a paper entitled "The Identification of **Physaloptera** sp. from the Richardson's Grouse" which was published in the Journal of Wild Life Management. Dr. H. C. Carlson in co-operation with Dr. F. E. Graessar prepared a paper entitled "Case History—Fibrosarcomata in Two Mute Swans" which was submitted to the Canadian Veterinarian for publication. Dr. C. H. Bigland, Dr. H. C. Carlson and Dr. G. R. Whenham prepared a paper entitled "Pullorum in Turkeys—Experimental Testing in Natural Infection" which was also submitted to the Canadian Veterinarian for publication. Three papers on poultry diseases were presented at the annual Poultry Pathologists Conference in Ottawa.

Experimental

A group of twenty 10-week old poults which had reacted to the whole blood pullorum test were purchased for the purpose of conducting experimental pullorum testing through to maturity. These birds were subjected to anywhere from 3 to 5 different pullorum tests in an effort to determine the efficacy of the various methods of pullorum testing. At the end of the testing period, the birds were sacrificed and cultural examination made to determine the presence or absence of Salmonella pullorum organisms.

Two mute swans were received from a local game farm, both of them bearing large fibrosarcomas on the leg. The tumor from one of these birds was removed and injected into several species of birds and experimental animals in an effort to determine whether or not the tumor was caused by a transmissible agent. The findings were negative.

Report of the Schools of Agriculture and Home Economics and 4-H Club Programme

J. E. HAWKER, B.Sc., B.A., Superintendent

J. E. Birdsall, M.Sc., Principal, Olds School
N. N. Bentley, B.Sc., B.A., Principal, Vermilion School
C. L. Usher, B.Sc., Supervisor, 4-H Clubs

For the 1958-59 term, graduation exercises were held at both Schools on April 8th, 1959. On this date, Diplomas of Graduation were presented as follows:

	Olds	Vermilion	Total
Diplomas in Home Economics	7	8	15
Diplomas in Agriculture	56	50	106
	63	58	121

The total of 121 graduates is sixteen below that of the total number graduating the previous year.

The annual conference for teaching staff at all Schools was held at the Vermilion School October 7th, 8th and 9th, 1959. Only one paper was presented by Mr. N. N. Bentley, Principal of the Vermilion School, on 'Vocational Agriculture in Canada'. The balance of the conference time was fully occupied with course and subject content revisions designed to keep the curriculum current.

In 1959 there were eight staff changes. Three of these were increases in staff necessitated by increased enrollment in agricultural courses and the addition of elective subjects. The remaining five were required where teaching staff accepted other responsibilities.

Board of Agricultural Education

(a) General

The annual meeting of the Board was held in Edmonton, April 17, 1959. In his opening remarks, the Minister stated that the government planned to use the Fairview School for educational purposes. Just what use and when would depend largely on the report of the Cameron Commission on Education, he added.

The Minister stated that the government was looking forward to effecting improvements at the Schools as soon as there was reasonable certainty as to the nature of future developments.

Transportation assistance to students from the Peace River area attending the School at Vermilion or Olds was reinstated. The Second Year and Two-in-One Courses in Home Economics were reinstated at all schools in the fall of 1958. This is reflected in some increase in attendance of girls from 38 at three schools in 1957 to 50 at two schools in 1959.

Details of proposed changes in courses in agriculture and home economics, indicating a measure of specialization through electives, were approved. (See addendum 111 to minutes of the Board of Agricultural Education). The most significant change was provision for pooling Second Year and Two-in-One students in agriculture on Saturday mornings for which time they would elect enrollment in one of six specialized subjects.

Students in home economics were also given the opportunity of electing one of two options in the first year, one of three 4 period options and one of five 2 period options in the second year.

Advanced standing in academic subjects was allowed all students who could submit transcripts showing "B" standing or better in Language 20 and Science 20, and "A" standing or better in Grade IX Mathematics. Those obtaining credit could elect time in subjects of their choice available at that point in the time table.

It was agreed that representation from the ranks of professional home economists in Alberta be named to the Board of Agricultural Education.

(b) **Liaison Sub-Committee of the Board of Agricultural Education**

Pursuant to a motion passed by the Board April 18th, 1958, a Liaison Sub-Committee was appointed by the Minister of Agriculture with the following membership: Dr. C. F. Bentley, Dean, Faculty of Agriculture, University of Alberta; Dr. T. C. Byrne, Chief Superintendent of Schools, Department of Education; Miss G. Duggan, representing the Director, School of Home Economics, University of Alberta; J. E. Hawker, (Chairman) Superintendent, Schools of Agriculture and Home Economics, Department of Agriculture.

At the initial meeting of the committee on February 20th, 1959, terms of reference and the general areas of particular interest to the committee were considered. (Subsequently, at its regular meeting held April 17th, 1959, the Board agreed that the Liaison Committee should include home economics, as well as agricultural education at all levels in Alberta in its field of study).

To the second meeting of the committee, held on March 20th, 1959, were invited the following personnel in an advisory capacity; R. E. Byron, Director, Vocational Education, Department of Education; Miss A. B. MacFarlane, Supervisor of Home Economics, Department of Education; Mrs. V. G. Macdonald, Supervisor, Women's Division, Extension Branch, Department of Agriculture; Miss P. Mewha, Associate Supervisor, 4-H Clubs, Department of Agriculture; M. G. Gault, Superintendent, Athabasca School Division, Department of Education; Dr. A. R. Robblee, representing the Dean, Faculty of Agriculture, University of Alberta.

From the second meeting the following recommendations were made to the Board:

(1) That the principle of offering elective subjects in both agriculture and home economics should be recognized.

(2) That a 'core' of essential subjects should be set out for each year in both agriculture and home economics.

(3) That course patterns, including some electives, should be set out for both agriculture and home economics.

(4) That consideration should be given by the Board to recommending the raising of salaries for school of agriculture teaching staff in order to attract the best calibre of teacher.

It was agreed that a review of present offerings in Alberta in agricultural and home economics education at all levels would be very desirable. The chairman agreed to prepare such a review.

The 1959-60 Term

The upward trend in enrollment noted in the fall of 1958 continued in 1959 with a 10 per cent increase at the Olds School and 20 per cent increase at Vermilion. The number registering from the Peace River area remained almost unchanged at 38 as compared with 36 last year. A total of 6 students registered from southern B.C. and were divided between Olds and Vermilion.

An increase of seven girls was registered at Olds and an increase of six at Vermilion.

Enrolment figures at the opening of the term on October 27th, 1959, were as follows:

	Olds	Vermilion	Fairview	Total
Agriculture				
1st Year	57	74	Not Operating	131
2nd Year	32	37		69
Two-in-One	37	26		63
Sub-Total	126	137		263
Home Economics				
1st Year	13	14		27
2nd Year	6	5		11
Two-in-One	5	7		12
Sub-Total	24	26		50
Total	150	163		313

The Fairview School did not operate during the 1958-59 term.

Maintenance and Construction

At Fairview the school buildings were kept heated moderately during the winter and a skeleton staff was maintained to care for the Aberdeen-Angus herd and see that no damage occurred to the school buildings or contents.

Summer Program

Again this year there was heavy demand for the use of facilities at both Olds and Vermilion Schools by a variety of organizations. It was possible to accommodate most bona fide requests.

The regular summer program at both schools included Farm Women's Week, a total of four one week courses for 4-H Club members and a three day school staff conference. In addition, some of the other groups were: 4-H Club Leaders' Conference, Horticultural Conference, District Agriculturists' Short Courses, Agriculture Society Meetings, Provincial Fire Officers' School, the Cameron Commission and others.

Appreciation

Very liberal support for the work of the schools was again provided by a large number of commercial companies, farm and other organizations and by individuals. A great proportion of this support is in the form of scholarships, bursaries and prizes. The Department expresses sincere thanks for these substantial contributions.

Officials of the University of Alberta and from the Federal Government have been helpful in lending various aid to the Schools. Their co-operation is gratefully acknowledged.

Continuing programs of active alumni associations at each school have continued to be carried out. This is appreciated.

Throughout the year past, the ready co-operation of principal and staff at each school has been most gratifying.

OLDS SCHOOL OF AGRICULTURE AND HOME ECONOMICS

The year 1959 was satisfactory in every way. Enrollment increased significantly in both Agriculture and Home Economics; the level of education of new students had risen; a very stable situation existed with regard to staff at all levels; the school facilities were used quite fully; an extensive program of maintenance was carried out, as well as some new construction, and farm production was quite satisfactory.

Little Royal and Achievement Day

The Silver Jubilee Little Royal and Achievement Day was held on April 1st, 1959. This was the 25th Anniversary of the first Little Royal, started in 1934 by Mr. D. A. Andrew, who was Animal Husbandry Instructor at that time. A preview of the Dress Review held on the previous evening was attended by about 200 local people and Agricultural School students. About 1,000 people attended the Little Royal and 500 the Dress Review from which another 500 were turned away for lack of accommodation. Judge of the Little Royal was Mr. V. Janssen, Assistant Supervisor of 4-H Clubs while the special anniversary class was judged by F. F. Parkinson who was a member of the staff in 1934 and Mr. C. Leeson a graduate of that year.

Graduation

At the Closing Exercises held April 8th, 1959, Rev. B. Johnson of Grace United Church, Edmonton, delivered the address to the graduating class. Ronald Everett of Claresholm, a second year agriculture student and president of the Students' Union, was Valedictorian. A Surplus Wheat Board University scholarship was awarded to Norman Bauer of Hilda. Prizes for proficiency in various fields were awarded to 15 graduating students.

Diplomas of Graduation were awarded as follows:

	Agriculture	Home Economics	Total
Two Year Coruse	21	......	21
Two-in-One Course	35	7	42
	56	7	63

Special Lectures During Regular Courses

Two specialists gave courses of several days duration in January and early February. Mr. Norman S. Thomson, District Irrigationist, lectured to second year and two-in-one agriculture students on irrigation, while Dr. J. G. O'Donough of the Veterinary Services Branch gave a series of lectures to the same students on veterinary medicine.

Special speakers who visited the schoolto give one lecture each included Dr. C. F. Bentley, Dean, Faculty of Agriculture, University of Alberta; Mr. S. S. Graham, Assistant Director, Extension Service; Mr. J. G. Stothart, Superintendent, Experimental Station, Lacombe; Mr. D. H. McCallum, Dairy Commissioner; Mr. W. H. T. Mead, Livestock Commissioner; a representative of the Women's Division, National Employment Service, Calgary; and Mr. J. McKay, Director Highway Safety, Alberta Department of Highways.

Special Activities and Courses

The following is a list of special functions held at the school between the close of the regular course in the spring and reopening in the fall:

Month	Event	Attendance
April	4-H Leaders' Conference	50
April	Horticultural Conference	55
June	Bandmasters Clinic (Department of Economic Affairs)	57
July	Alberta Women's Institute Girls' Clubs	98
July	Farm Women's Week	116
July	4-H Club Week	173
August	4-H Club Provincial Eliminations	208
August	O.S.A. Alumni Reunion	233
August	Training Course for District Agriculturists	41
October	Fire Chiefs' Conference (Provincial Fire Commissioner's office)	35
October	Agriculture Society Banquet	134

In addition to the events listed above there were a large number of one day or afternoon gatherings including W.I. and F.U.A. Conferences, Church study groups, 4-H Field days, group picnics and other such events. These, together with the events listed above and the Little Royal and Achievement Day account for at least 4,500 people coming to the school in organized groups. In addition to these many small groups and individuals inquired for information.

Facilities of the school were used by the District Agriculturist and District Home Economist for weekly farm management classes of farmers during the winter months.

Summer Activities of Teaching Staff

Name	Position	Summer Duties
J. E. Birdsall	Principal	At the school
S. B. Wilton	Farm Manager	At the school
G. B. Harrison	Maintenance Supervisor	At the school
J. I. D. Mathieson	Maintenance Worker	At the school
G. A. Ogston	Farm Foreman	At the school and 4-H judging
W. Baranyk	Horticulturist	At the school
Mrs. F. Hodgson	Dietitian	At the school during courses
Miss G. Daley	Clothing Specialist	Extension Service
Miss K. Carney	District Home Economist	Olds and Drumheller
H. W. Sutherland	Assistant District Agriculturist	Olds
W. C. Kirk	Agricultural Engineer	Extension Service
H. J. Armstrong	Fieldman	Field Crops Branch
J. P. Tait	Apiary Inspector	Field Crops Branch
Mrs. V. Charles	School Nurse and Dean of Women	Summer leave
R. P. Warrington	Dean of Men	Summer leave
W. D. Ratcliff	Resigned and returned to his farm	
A. F. Peltzer	Resigned and returned to his farm	

Maintenance Program

A normal program of repair and redecoration of student rooms, class rooms, offices and residences was carried out. In addition the interior of the cooking laboratory was remodelled, the dormer window in the library was replaced with a picture window and thirty dormitory windows were replaced with aluminum combination windows. A new concrete floor was laid in the dining room.

Public Works Construction

A new Dairy Building consisting of loafing barn, milking parlor, dairy, classroom and office was built by an augmented maintenance crew. It is to be completed in 1960.

Material is on hand for extending the maintenance storage building, and for constructing a feed grain storage building, a hay storage building and a sheep shed.

The Weather

Weather records have been kept continuously since the school opened in 1913.

Records for the 1959 growing season show above normal temperatures in April causing early budding of trees and shrubs. On April 23rd the temperature dropped to 1 degree below zero resulting in damage. Eleven inches of snow fell during the first week of May but the temperature rose to 82 degrees on May 11th and hot dry weather continued through May and the first two weeks of June. Crops germinated slowly and unevenly and forage crops suffered. The last two weeks in June were cool and the precipitation high. The month of July was hot and dry. All vegetation showed the affects of limited moisture and intense heat. The drought was broken with 2.52" of rain on July 27th and 28th but pastures were retarded and there was no second cutting of hay. Another week of hot dry weather followed the rain. The remainder of August and all of September and October were cool and wet. By October 11th 6.1" of snow had fallen and temperatures well below freezing were recorded. Fall frost damage to woody vegetation will not be known until 1960. A hail storm on August 3rd hit the south farm and severe damage was done.

Grounds and Plots

In spite of damage to perennials by severe frost in April the grounds presented a fine showing throughout the season. An abundance of bedding out plants were started in the greenhouse and set out to make a colorful showing.

The entire campus was surveyed and a contour map drawn as a first step in establishing permanent roads which will eventually be hard surfaced. A start was also made in establishing permanent roads. The area south of the dormitory was drained, levelled and prepared for seeding to grass as a playing field.

The plot area produced a good supply of vegetables for the dormitory, seed grain for the farm and an unusually large supply of foundation stock Olds Creeping Red Fescue. Test plots of cereal and forage crops and a test of cultural methods were carried out in co-operation with the Lacombe Experimental Farm. A rotation providing for variety testing, cultural experiments, seed increase and vegetable production was worked out and a start made in implementing it.

The Farm

In spite of drought, hail, and frost satisfactory yields were obtained on the farm and the harvest was safely gathered. This was true of hay, silage, grain and straw for bedding.

Grain and forage production were as follows:

Crop	Acreage	Yield
Wheat	20	600 bushels
Oats	55	2,250 bushels
Barley	180	6,100 bushels
Hay	115	120 tons
Ensilage	40	150 tons
Straw	.....	80 tons

Sixty acres were seeded to a forage mixture. Between 70 and 80 acres of virgin sod was broken on the south farm.

Additions and replacements of equipment made in line with recommendations of Department of Agriculture engineers have resulted in a saving of labor and more timely operations.

In the Shorthorn beef herd 15 calves were dropped in April and May. The herd has been on performance test for two years and was entered in the Dominion-Provincial testing program in

1959. Teaching needs require a larger herd so only culls were disposed of during the year and these were sold to the dormitory as beef. In August an outbreak of "Clostridium perfingens" infection and/or mercury poisoning resulted in the death of four mature cows.

The Holstein-Friesian herd continues to produce well above the Breed Class Average and continues to meet the requirements of the dormitory. Six cows, six heifers and four calves were sold.

The sheep flock started in 1958 gave good results. Lambing was planned for two periods—January and February and in June. An average of 153% lamb crop was obtained with the early lambs and 163% in June. The flock was quarantined for scrapies and one ewe lamb, progeny of a ram from an infected flock, had to be destroyed after which the quarantine was lifted. Five high quality ewes were purchased at a dispersal sale to improve the herd.

In the Yorkshire swine herd 133 pigs have been farrowed and eight lost from erysipelas and other causes. Demand for breeding stock has been light. Quality of the herd was high.

Fall Term

Registration by classes was as follows:

	Agriculture	Home Economics	Total
First Year	57	13	70
Second Year	32	6	38
Two-in-One	37	5	42
	126	24	150

Christmas closing found all students who had registered still at the school except for one agriculture student who had to withdraw in order to meet unexpected financial obligations.

The term was satisfactory in every respect. It started with a well qualified and capable staff on the job, discipline problems were at a minimum, students' work was satisfactory to good and in spite of a low enrollment of girls a very good program of extra curricular activities was carried out. Problems of discipline and poor performance were most prevalent with students having the least education. This posed the question of whether the minimum entrance requirement should be raised to grade X.

Instructional and Administrative Staff For the Fall Term

J. E. Birdsall, M.Sc.—Principal, Farm Management
Mrs. Frances Hodgson, B.A.—Dietitian
Mrs. V. Meakings Charles, R.N.—Dean of Women, School Nurse, Home Nursing
R. P. Warrington, F.R.G.S.—Dean of Men, English, Recreation
Miss G. Daley, B.Ed.—Clothing, Textiles, Laundering
Miss K. Carney, B.H.Ec.—Foods, Apartment
Mrs. E. Collin, B.Sc.—Home Management, Handicrafts, Home and Family Living
H. J. Armstrong—Metals
W. C. Kirk, B.Sc.—Machinery and Motors
G. B. Harrison, B.Sc.—Buildings, Maintenance Supervisor
J. L. Stone—Shop Assistant, Mechanics
S. B. Wilton, B.Sc.—Animal Science
H. W. Sutherland, B.Sc.—Animal Science, Farm Management, Agricultural Literature
G. A. Ogston—Animal Science, Farm Foreman
W. Collins, B.Sc.—Field Husbandry
W. Baranyk, B.Sc.—Horticulture, Botany, Community Organization, Economics and Co-operation
J. P. Tait, B.Sc.—Science
J. I. D. Mathieson—Typing, Record Keeping, Math
Mrs. B. Brown—Librarian
D. G. Robb—Accountant
Miss Y. Dodd—Secretary
Mrs. H. W. Sutherland—Stenographer

VERMILION SCHOOL OF AGRICULTURE AND HOME ECONOMICS

The 1958-59 Term

The enrollment picture continued to improve in 1959. A total of 132 students were registered at the end of the term in April, 1959. In October a total of 163 students enrolled. These included 73 students in the First Year which was the largest number in this Class since the fall of 1945.

A normal program of classes and extra-curricular activities carried through with notable success.

Visitors and Guest Speakers

Visitors and guest speakers who addressed students included principally Department of Agriculture officials, members of the Faculty of Agriculture at the University of Alberta and subject matter specialists from the Dominion Experimental Farm Service.

Special Events

Established special events which brought large numbers of visitors to the school included the V.S.A. Alumni Re-Union, Parents' Week End, a district High School Basketball Tournament, the Little Royal and Graduation Exercises.

Mr. W. L. Robinson, Vermilion, and Mr. Charles Gordon of the Alberta Livestock Branch were Guest Judges at the Little Royal.

Graduation

Graduation exercises were held on April 8th at which time Mr. Peter Jamieson delivered the Graduation Address and Mr. R. M. Putnum represented the Department of Agriculture.

Diplomas of Graduation were awarded as follows:

	Agriculture	Home Economics	Total
Two Year Course	31	3	34
"Two-in-One" Course	19	5	24
	50	8	58

Winners of **Scholarships** for distinction in various fields were as follows:

Vermilion Board of Trade: Laurie-Anne Campbell, Edmonton
General Proficiency: Chester Jacknisky, Thorhild
Plant Science: Raymond Bygrove, Hillmond, Saskatchewan
Farm Mechanics: Hartmann Nagel, Woking
Animal Husbandry: Ralph Grove, Daysland
Poultry: Alan Hirsch, New Sarepta
University of Alberta: Gerald Mears, Peace River

Winners of the **Staff Medals** were:

Gerald Mears—Peace River
Ronald Holmlund—Wetaskiwin

It is noteworthy that the Vermilion Board of Trade Scholarship for having been named by the Staff as the Student in Agriculture who made the greatest contribution during the term to the Academic, Social, Literary and Athletic life of the School was awarded to a girl from the City of Edmonton. This was the first girl to have enrolled in the Agriculture Class since the very early days of this School's history.

Summer Short Courses

Principal items included in the summer program were:

July 3rd—V.S.A. Alumni Summer Re-Union
July 4th—A.W.I. Constituency Convention
July 6th-11th—First 4-H Club Week
July 13th-20th—Second 4-H Club Week
July 20th-25th—Boys' & Girls' Summer Short Course and Fair Camp.
July 27th-30th—Farm Women's Week
Aug. 2nd-7th—First Provincial Fire Officers' School

In addition to these organized programs, facilities were provided for a number of meetings and conferences by various groups and organizations in the surrounding district.

Employment of Staff During the Summer

N. N. Bentley returned from leave of absence on April 15th and resumed duties as Principal.

J. F. Harcus, W. D. Olson, Mrs. K. I. Bell and H. Cooper continued at the School as Farm Manager, Maintenance Foreman, Secretary and Accountant respectively.

K. M. Stone, L. G. G. Seath and R. M. Warner returned to private farming operations.

J. A. R. Palin, W. Dietz, B. J. Godwin and Mrs. L. C. Johnston engaged in other work for the Department of Agriculture with Community Pastures, 4-H, Field Crops Branch and Extension Services respectively. Miss Reason transferred to Secretarial work at Headquarters.

Mrs. Warren, Mrs. Harcus, Mrs. Alfke and J. A. Skripitsky and W. Burton terminated temporary appointments.

D. C. Folk undertook a special assignment in the form of Public Relations for the School in the course of which he contacted former, current and prospective students at their homes during the summer months. Although, it is most difficult to assess the effect and value of such work, there appeared to be considerable interest and enthusiasm for it on the part of those visited.

K. M. Stone, on a part-time basis, continued regular production of the weekly 15-minute radio program "The Halls of V.S.A.", which has been aired over C.K.S.A. without interruption since the fall of 1957. Five minute extracts from this program or specially prepared programs were also broadcast from time to time over Stations C.F.C.W. at Camrose and G.F.G.P. at Grande Prairie.

Maintenance

The normal maintenance and repair program was carried on by the regular staff under the foremanship of W. B. Olson but no major projects were undertaken and there were no capital items constructed.

At several points on the campus water mains broke and had to be repaired.

The program of replacing tablet arm desks in various classrooms with tables and chairs was continued.

School Grounds and Field Crop Plots

The normal program in this section of the work was continued under the part-time supervision of Mr. B. J. Godwin. The School grounds and the Field Crops Demonstration Plots continued to attract considerable public interest as well as to supply the School with classroom materials.

The School Farm

Drought conditions during the growing season followed by rains and frost and snow during harvest made crop production of any kind most hazardous. Pastures were in short supply and large portions of crops in the Vermilion District were not harvested. Many others were cut for feed because of poor yields and fodder shortages.

Unfavourable crop conditions in both 1958 and 1959 resulted in feed shortages on the School farm so that hay, bedding and feed grains had to be purchased to maintain the regular livestock program.

Crops produced were:

Crop	Acres	Yield
Wheat	10	105 bushels
Oats	77	70 tons (cut for feed)
Barley	32	800 bushels
Hay	117	35 tons
Greenfeed	40	50 tons silage
Fallow	38	
Pasture	70	
Breaking	32	
	416 acres	

The livestock inventory as of March 31st, 1959, was:

Dairy Cattle	48
Feeder Cattle	12
Horses	2
Sheep	114
Laying Hens	363
Brooder Chicks	280

Principal additions and replacements of farm equipment included a McCormick Manure Spreader and a Massey-Ferguson Heavy Duty Cultivator with 3-point hitch.

Th 1959-60 Fall Term

Enrolment at the opening of the term was as follows:

	Agriculture	Home Economics	Total
First Year	73	14	87
Second Year	38	5	43
"Two-in-One"	26	7	33
	137	26	163

The marked increase in the First Year Agriculture Class necessitated division into four groups rather than the customary three groups for laboratory purposes. Similarly, this class was divided into two sections for lecture-type lessons. The resultant increase in load on the instruction staff is readily calculable.

Enrollment in the Home Economics Class, though improved, continues to be very low, particularly in the Second Year of the Two-Year Course.

By the end of the Fall Term there were two withdrawals from the First Year and two from Second Year Agriculture, and one from Second Year Home Economics. Two students in the "Two-in-One" Agriculture Class were required to transfer to the First Year of the Two Year Course.

Choice of Electives

Members of the Graduating Classes who were given some choice from a limited number of elective subjects formed groups (limited to a maximum of 16 per group) as follows:

Agriculture	
Advanced Animal Husbandry	14
Advanced Automotives	16
Welding	16
Woodshops	15
Dairying, Poultry and Horticulture	3
Home Economics	
Advanced Clothing	6
Advanced Cookery	6

With only one exception, First Year and "Two-in-One" Students in Home Economics chose the Agriculture option (Dairying, Poultry and Horticulture) rather than Record Keeping.

Credit For Academic Subjects

Not all students in the First Year Courses who were eligible to do so claimed credit on the basis of their High School standing in Mathematics, English or Science. Members who did so were as follows:

Mathematics	7
English	10
Science	7

These students were given the option of taking lessons in Typewriting in lieu of these credits. Seven chose to do so. The balance chose subjects available on the time-table and which they were qualified to take.

Teaching and Administrative Staff

N. N. Bentley, B.A., B.Sc.Principal, Markets and Marketing, Home and Family Living, Assembly
D. C. Folk—Farm Building, Assembly
B. J. Godwin, B.Sc.—Horticulture, Field Husbandry, Farm Management (1st Year Lectures)
R. M. Gratz, B.Sc.—Dairying and Poultry, Animal Husbandry
J. F. Harcus, B.Sc., B.Ed.—Superintendent of School Farm, Animal Husbandry
R. Jubinville—Dean of Men's Residence, Gymnasium Supervisor
J. K. MacKenzie, B.S.A.—Motor Mechanics
W. B. Olson—Superintendent of Maintenance, Metalwork
J. A. R. Palin, B.S.A.—Farm Machinery, Welding (Elective), Public Speaking (Home Economics)
L. G. G. Seath, B.Sc.—Science, Farm Management
K. M. Stone, B.Sc.—Field Husbandry
R. M. Warner, B.Sc.—English, Math, Economics and Co-operation, Community Organization
Mrs. J. Alfke, B.Sc.—Home Management
Mrs. K. Gill, B.Sc.—Foods, Meal Service
Mrs. L. C. Johnson—Clothing, Handicrafts
Miss J. Haworth, R.N.—Dean of Women's Residence, School Nurse, Home Nursing
Miss H. Reason—Typing, Record Keeping, Staff Stenograghy, Library Supervision
Mrs. H. Parlee—Dormitory Supervisor
Mrs. K. I. Bell—Secretary
H. Cooper—Accountant

THE 4-H CLUB PROGRAM

C. L. USHER, B.Sc., Supervisor, 4-H Clubs
Priscilla A. Mewha, B.Sc.(H.Ec.), Associate Supervisor, 4-H Clubs
V. T. Janssen, B.Sc., Associate Supervisor, 4-H Clubs
Nancy Pasochnik, B.Sc.(H.Ec.), Assistant Supervisor, 4-H Clubs

John A. Charnetski, Assistant Supervisor, left the Branch September 15th, 1959, to return to University.

The regular staff was supplemented with summer help for the period May through September. Those employed included: Miss Marlene Wynder, Miss Maxine Rae, Mrs. Walter Dietz, Mr. Robert Church, Mr. John Lockhart. A total of nine men and women were hired on a daily basis as needed to judge at 4-H Achievement Days.

Administration and Conduct of the 4-H Program

A large portion of the time of the 4-H Supervisor and other members of the 4-H staff was concerned with general administration and supervision of the 4-H program. In addition to this, 4-H staff members assumed direct supervision of clubs in areas where district extension offices were vacant.

Provincial 4-H activities conducted by the 4-H staff included: Club Week programs, Provincial Eliminations, Regional and Provincial 4-H Leadership Courses, the Provincial 4-H Dairy Show, the Provincial Junior Seed Fair, the Provincial and Inter-Provincial Thematic Display Competitions, the 4-H section of the Alberta Quick Freeze Locker Association and Alberta Dairymen's Association Conventions and numerous lesser activities.

Other events in which the 4-H staff took a very active part included: the Canada-U.S. Exchange Program, National 4-H Club Week, the Alberta-Montana Exchange, University Farm Young People's Week, rallies, camps, tours, achievement days, regular meetings and banquets.

The Supervisor again represented the Department as a director on the Canadian Council on 4-H Clubs and this year assumed duties as an executive member of the Council and chairman of the Agricultural and Exchange Committees.

The 4-H staff also participated on the committees of the "A" Class fairs and in livestock and other association work.

The direct supervision of individual clubs in the province and of the over-all club program within each district is the responsibility of the district agriculturists and district home economists of the Extension Service. Details of the work performed by this staff in 4-H are to be found in the report of the Extension Service.

Further substantial assistance in the 4-H program was given by head office personnel of the Extension Branch, and by members of the Livestock, Field Crops, Dairy and Poultry Branches, and the Schools of Agriculture. The nature and extent of this help is to be found in the various branch reports. In all cases it was very much appreciated.

Assistance of Organizations

During 1959 the first major change in field crops project sponsorship was introduced since such sponsorship began in the early 1930's. This change involved the Alberta Wheat Pool, the United Grain Growers and the Line Elevators Farm Service relinquishing their individual sponsorship of wheat and forage, oats, and barley clubs respectively and pooling their resources for joint sponsorship of field crops clubs. Under the new sponsorship, assistance in the form of seed grain for club members was dispensed with in favour of recognition for work well done through the year. This recognition to be for best standing crop, records and achievement day display. The form of each award to be cash along with a suitable medallion. It is too early to assess this change in sponsorship but it appears as though it is definitely a step in the right direction. The Alberta Wheat Pool continued to sponsor the garden project.

Besides this, the organizations involved provided numerous prize awards and had their field staff assist with a great many 4-H events.

Substantial assistance was also received during the year from the livestock associations, service clubs, boards of trade, agricultural societies and exhibitions.

The T. Eaton Company of Canada provided awards for all clothing, foods, home decoration and beef clubs. In addition, they offered their backing to 4-H livestock sales and other events along with a number of other commercial organizations and interested individuals.

All the above mentioned help added greatly to the 4-H program.

Federal Assistance

The contribution of the Canada Department of Agriculture to 4-H in Alberta is primarily a financial one. However, assistance is also given swine, dairy and sheep clubs through Federal Purebred Sire policies.

Financially, the Canada Department of Agriculture contributed $9,697.00 in direct assistance to the 4-H program during the 1958-59 fiscal year. This assistance was absorbed in sharing with the province: the Federal Provincial grant to all clubs, the cost of a number of supplies, leadership training expenses, Provincial Eliminations costs and some awards.

Through the Federal Purebred Sire Loaning Policy the following assistance is being given: 5 boars placed in 4-H clubs in 1959 for a total of 14 boars out in clubs; 6 rams placed in 4-H clubs in 1959 for a total of 12 rams out in clubs; and 3 holstein bulls placed in 4-H clubs in 1959 for a total of 5 bulls out in clubs.

Field staff of the Federal Department assisted in judging at 4-H Achievement Days and in other like work. This assistance substantially eased the heavy load on our own staff.

Club Membership and Distribution

It is gratifying to note that the decline in 4-H membership which has been continuous since 1955 appears to have been stemmed. In 1959 there was an increase of 8 clubs and 644 members. The sharpest increase during the year was in the clothing and dairy projects.

4-H CLUB DISTRIBUTION IN ALBERTA, 1958-59

	1958		1959	
Farm Projects	No. of Clubs	Members	No. of Clubs	Members
Beef Feeding	161	2,699	157	2,755
Beef Breeding	0	0	1	11
Dairy	46	738	55	921
Swine	6	94	10	149
Sheep	2	28	4	74
Poultry	2	31	1	24
Potato	3	48	4	68
Field Crops	94	1,350	75	1,180
Total	314	4,988	307	5,182
Homemaking Projects				
Clothing	78	977	91	1,392
Garden	47	551	44	509
Food	15	160	19	224
Home Decoration	3	37	4	50
Total	143	1,725	158	2,175
Total (All Projects)			465 clubs	7,357 members
Increase (All Projects)			8 clubs	644 members

Organized Club Activities

Apart from carrying through their individual club projects, club members in 1959 took part in activities as follows:

In Agricultural Projects

2,490	4-H Club regular meetings
47	4-H Club rallies
306	4-H Club tours
233	4-H Club Achievement Days
42	4-H Club leadership courses
252	4-H Club special meetings

Total organized 4-H activities—3,215
Total attendance (4-H and others)—97,272

In Homemaking Projects

Total organized 4-H activities—1,320
Total attendance (4-H and others)—31,490
Total organized 4-H activities all projects—4,535
Total attendance at these activities—128,762 persons

Leadership Training and Recognition

(i) Leadership Training

Again a great deal of emphasis was placed on leadership training. This was realized as follows:

(a) Regional Courses

One day regional 4-H leadership courses were held at the following points: Camrose, Brooks, Medicine Hat, Lethbridge, Calgary, Westlock, Grande Prairie, Berwyn, Mayerthorpe, Drumheller, Hanna, Coronation, Stettler, Olds, Lacombe, Edmonton, Vegreville, Vermilion and St. Paul.

These courses attracted a total of 620 leaders and their assistants from all sections of the province. The program in each case involved a study of local club problems, the co-ordinating of regional activities and new ideas on programming. Hall costs were assumed by the Department where necessary while leaders provided their own meals and transportation.

(b) Provincial Courses

A two day Provincial 4-H Leaders' Course was held at the Olds School of Agriculture in April for the leaders of summer projects and at the Vermilion School in October for the leaders of winter projects. Attendance in the spring was 36 and in the fall 61. In each case the program was basically a study of the actual projects concerned. All leaders were guests of the Department of Agriculture and sponsoring organizations.

(ii) Recogniiton of Leadership

Leadership Award Certificates recognizing service to 4-H were presented as follows: 58 Five Year Certificates; 16 Ten Year Certificates. The large number of these certificates being issued indicates the interest shown by leaders in carrying their work for a number of years.

4-H Club Weeks

Three Club Weeks were held at the two Schools of Agriculture. Two of these were at Vermilion and one at Olds. Total attendance at these Weeks was 448. This attendance constituted one official delegate from an equal number of clubs. Visiting delegations included two 4-H members from Saskatchewan, and four from Montana at the Vermilion Weeks and a group of eight from British Columbia at the Olds Week.

A balanced program of work, recreational and social activities was carried on each week. Junior leadership training was also stressed at all three weeks.

Scholarships

(1) Wheat Board Surplus Monies Trust Fund Scholarship

A total of 21 scholarships from the Wheat Board Surplus Monies Trust Fund were awarded at Club Weeks as follows:

Vermilion (First Week):	
Girls' Section	1. Carol Marquardt, High Prairie
	2. Jean Steeves, Sexsmith
	3. Elaine Nord, Ryley
	4. Angeline Zaharko, Bruderheim
	5. Sandra Pierce, Mapova
Boys' Section	1. Jack Olson, Red Deer
	2. Arnold Rand, Innisfail
	3. Merlyn Wilson, Bentley
	4. Terry Vickerson, Sexsmith
Vermilion (Second Week):	
Girls' Section	1. Hazel Walker, Endiang
	2. Rose Kubejko, Breton
	3. Margaret Davidson, Vermilion
Boys' Section	1. Warren Henderson, Forestburg
	2. Johnny Kempjes, Gibbsons
	3. Wiliam Golby, Pembridge
Olds:	
Girls' Section	1. Dianne Stuart, Clive
	2. Valerie Pointen, Calgary
	3. Evelyn Gallinger, Buck Lake
Boys' Section	1. Erwin Yule, Gleichen
	2. Barry Rust, Millicent
	3. Robert Crow, Barons

The above scholarships given annually are each to the value of $100.00 and are tenable at a regular winter course at a School of Agriculture. The scholarships are awarded on the basis of past club record, participation in activities during Club Week, and knowledge of subject matter covered at Club Weeks.

(2) Canadian National Exhibition Scholarship

This scholarship goes annually to an Alberta farm boy or girl with 4-H training. It is valued at $600.00 and is payable towards a University degree in Agriculture, Home Economcis or Veterinary Science. The scholarship was this year awarded to Alice Fraser, Clyde. Alice is now enrolled in Home Economics at the University of Alberta.

(3) Alberta Wheat Pool Bursaries

The Alberta Wheat Pool Bursaries of $200.00 each to students in first, second and third year Home Economics at the University of Alberta were awarded to: Third Year—Natalka Semotiuk, Newbrook; Second Year—Rosemarie Wenger, Egremont; First Year—Evelyn Rife, Clyde.

These scholarships are available only to members of garden clubs.

(4) Henry Wise Wood Memorial Scholarship

Four of these, each to the value of $135.00, were awarded to 4-H members to attend a School of Agriculture. Winners were: Gerald Kornelson, Atlee; Angus Park, Trochu; Wendell Lund, Hughenden; and Vivian Tremblay, St. Brides.

(5) Rotary Scholarship—Edmonton Exhibition

Two of these valued at $100.00 each and tenable at the Schools of Agriculture were awarded to Farm Camp members at the

Exhibition. Winners were: Wayne MacDonnell, St. Albert, and Verna Briggs, Coronado.

Provincial Eliminations

A total of 200 district winners attended Provincial Eliminations at the Olds School of Agriculture. Delegates had the opportunity for the first time of competing for any one of three major award trips: National Club Week, the Montana Exchange or the Washington Exchange. Selection was on the basis of 50% marks for past record and 50% for knowledge of the project as determined through competition.

Results in the three sections were as follows:

Project	No. of Members Competing	National Club Week Winners
Beef	71	Warren Henderson, Forestburg Merlyn Wilson, Bentley Marguarite Mappin, Byemoor
Dairy	23	Perry Plester, Falun Elaine Nord, Ryley
Field Crops	32	Ronald Holmlund, Wetaskiwin Allan Sorenson, Wetaskiwin
Sheep, Poultry, Swine and Potato	6	Josie McDonald, Mannville
Clothing	33	Connie Combest, Erskine Hazel Garbe, Wetaskiwin Rose Zeise, Dapp
Garden	22	Jean Holmlund, Wetaskiwin Betty Bricker, Blackie
Food and Home Decoration	13	Islen Grover, Brownfield

From 132 Agricultural Project Clubs, Erwin Yule of Gleichen and Leroy Pelletier were Montana Exchange Trip winners. For the same award, Katherine Svenningsen of Ponoka and Bettie Johnson of Markerville were selected from 68 Homemaking Project Clubs.

Ken Copithorne of Calgary was named winner from all clubs of the Washington Exchange trip in 1960.

Alberta-Montana 4-H Exchange

This was the thirteenth year of this exchange whereby four outstanding club members from Montana attend one of our Club Weeks and in return four top rating Alberta 4-H'ers are selected to attend the State 4-H Congress in Bozeman, Montana.

The delegation from Montana to Club Week at Vermilion this year included Margaret Finley, Blaine, Montana; Ver Nel Dwyer, Cascade, Montana; Wes Stevenson, Judith Basin, Montana; and Eddie Richard, Lake, Montana. Chaperoning these young people was the State 4-H Leader, Mr. Paul J. Moore. Besides attending Club Week this group were guests of the Calgary Exhibition for one day of the Stampede.

The Alberta delegation to the State 4-H Club Congress in Bozeman, Montana, August 24th-28th, was accompanied by Miss Nancy Pasochnik and Mr. J. M. Fontaine, District Agriculturist, Edmonton. The delegation had an opportunity to take part in many phases of the week long program which involved some 700 Montana 4-H'ers, their leaders and extension workers.

Canada-U.S.A. Exchange Program

A new addition to 4-H in Canada in 1959 was the inauguration of a National 4-H Exchange program with the U.S.A. Through this exchange Canada is to send annually to the National 4-H Conference in Washington one 4-H delegate from each province.

Expenses of these delegates are to be paid by the Canadian Council on 4-H Clubs. In return the U.S.A. is to send a similar delegation to attend National 4-H Club Week in Canada. Selection for this award trip is made at Provincial Eliminations and on a basis similar to the other major award trips.

The Alberta 4-H delegate to Washington in 1959 was Marjorie Newman from Blackie.

National 4-H Club Week

National Club Week was held in Toronto and Ottawa, November 14th-19th. A total of 140 delegates from all provinces attended this week along with four 4-H'ers from the U.S.A. and their chaperone. This is the second year the U.S.A. has had a delegation in attendance.

Nine girls and five boys made up the Alberta delegation along with chaperones, C. L. Usher and Miss Arlene Nelson, District Home Economist at Red Deer. Alberta members took leading parts in the program including such assignments as reading the lesson in church, chairing banquets and thanking the Prime Minister. They were an outstanding group of young people who represented this province well.

Royal Winter Fair

Poor harvest conditions limited the number of 4-H grain entries from this province at the Royal. In spite of this, Douglas MacIntosh of Granum took the World Wheat Championship while other Alberta 4-H'ers took the first twelve placings in the 4-H Wheat Class, first in early oats, second and sixth in medium and late oats, three places in barley and first in early potatoes.

Camps, Rallies and Tours

Successful lake camps were again held at Elkwater and Buffalo Lake. In addition two new camps were started in the Waterton Lakes area. Fair camps again proved popular and were held at Camrose, Vegreville, Vermilion, and Edmonton. In Calgary the rural youth week camp sponsored by the Calgary Exhibition was a major attraction for farm young people in southern Alberta.

The theme at all camps was "Conservation". This theme was developed taking in many phases of conservation. This is the first year that a general camp theme has been used.

Total attendance at camps was 650. All programs were organized and supervised by the Department of Agriculture.

Winter rallies and banquets continued to be popular 4-H activities. In most cases each of these involved a number of clubs and attracted a large attendance. A number of summer rallies and tours at Experimental Farms, Schools of Agriculture, the University and on outstanding stock and grain farms were held. Besides this, there were fourteen rallies in the homemaking projects in the spring at which district winners were selected.

Groups having been to National 4-H Club Week during the past three years all had reunions during the summer. Part of the program in each instance was devoted to a discussion of ways in which these young people could assist further with the 4-H program. The 4-H staff took part in these reunion programs.

Educational Displays

(a) Thematic Displays

This secondary project is proving to be one of the most popular at the present time. Displays built this past year depicted 4-H club work, good homemaking and farming practises and farm safety. These were exhibited at all "A" and "B" class fairs as well as at numerous Achievement Days and smaller fairs.

The Provincial Competition attracted 8 entries in Edmonton and 4 in Calgary. The winner at Edmonton was the Thorhild Beef Club and at Calgary the Bow Island Field Crops Club. These top two displays were entered in the Inter-Provincial Competition in Regina where the Thorhild Beef Club took top honors. This is the first time Alberta has won interprovincially.

(b) Floats

The building of floats has also become a very popular secondary project for 4-H clubs. 4-H floats were to be seen in most fair parades in Alberta during the summer.

Public Speaking

This activity is increasing in popularity annually among 4-H clubs. In 1959 public speaking competitions were held in many districts. Besides this, the Edmonton Exhibition sponsored a competition open to all district winners from Red Deer north. Steps are now being taken to develop something similar for southern Alberta.

Royal Luncheon—Legislative Grounds

A total of ten 4-H boys and ten 4-H girls were invited to attend the luncheon tendered for Her Majesty The Queen and His Royal Highness Prince Philip by the Government of Alberta. Selection was made on a basis of past club record. Those selected to attend included: Alice Fraser, Clyde; Virginia Witwicki, Radway; Priscilla Mewha, Markerville; Marion Renwick, Three Hills; Marjorie Newman, Blackie; Gail Lambert, Manning; Yvette Jean, Lafond; Jessie Ingledew, Hinton Trail; Josie McDonald, Mannville; Jane Moonen, Millet; William Golby, Meadowview; Morley Buyer, Carbon; Gordon Church, Balzac; Jack Yorgasen, Claresholm; Ronald Leonhardt, Drumheller; Sidney Starlight, Sarcee Reserve; John Kampjes, Gibbons; Leroy Pelletier, Pincher Creek; Erwin Yule, Gleichen; Warren Henderson, Forestburg.

Some of this group were privileged to speak to Mer Majesty following the luncheon. C. L. Usher and Priscilla Mewha attended as official chaperones of the group.

University 4-H Alumni

4-H members attending the University of Alberta continued to have an active interest in 4-H through the Campus 4-H Alumni Club. This group carries on a program designed to further promote 4-H work at home and on the campus. Valuable program suggestions are from time to time passed on to the 4-H branch. When requested, 4-H staff members take part in the Alumni program.

4-H Club News

Two issues of this 12 page bulletin were published by the 4-H staff during the year. Distribution was to 4-H members and others directly associated with the program. Total distribution was 8,000 copies per issue.

Press, Radio and T.V.

Press, radio and T.V. continued to be strong supporters of 4-H. A number of radio stations carried regular 4-H programs through the year while both the daily and weekly press continually carried accounts of 4-H activities. Some special activities were also featured on T.V. programs. The Department's "Call of the Land" program and "Farm Notes" also carried a number of 4-H events.

The 4-H staff contributed regularly to publicity through interviews given and articles written as requested.

AGRICULTURAL PROJECTS

Beef Clubs

This project is still the most popular with a total of 2,755 members enrolled.

Last year for the first time carcass grading reports were obtained where possible. Efforts were again made to obtain this information. Special dangle ear tags were introduced to make identification of animals in the plants easier. The full cooperation of the packing plants and federal graders was again realized in this undertaking. The reports have been enthusiastically received by members, leaders and extension workers.

The new senior project involving a pen of five animals was carried through for the first time. Only a very limited number of members undertook the project but those who did felt it worthwhile.

It has always been difficult to establish beef breeding clubs because very seldom can there be found twelve young people in a district interested in this particular project. Because of this, regulations were set up this fall allowing the beef breeding project to be carried along with beef feeding projects in a beef club. The stipulation is that there must be a minimum of three members carrying the breeding project in any one club.

Dairy Calf Clubs

The year saw a continued expansion in this project with an increase of 9 clubs and 183 members. This increase maintained the heavy demand for calves supplied by the livestock branch through the Dairy Heifer Calf Policy. The price of calves offered through this policy was increased from $32.50 to $40.00 in an effort to meet the demand. A total of 428 calves were distributed but a number of club orders could not be filled until very late in the project year.

The Third Year Dairy Project book was completed and distributed to members.

The Alberta Dairymen's Association had as their guests 20 members representing all dairy clubs south of Red Deer. The delegates were given this trip as an award for work well done.

The Provincial 4-H Dairy Show was held in conjunction with the Red Deer Fair and attracted a total of 47 exhibitors with 58 animals. As some clubs had very young calves at fair time, a Junior Calf Class was established for animals born between January 1st and April 1st. There was a total of 6 calves in the Junior Calf Class with top place going to Alice Miller of Athabasca;

24 calves in the Senior Calf Class with top awards to Isabelle Hunter, Carstairs; and 28 animals in the Yearling Class. First place here went to Barbara Black, Bearspaw. Showmanship was won by Roberta Enman, Wetaskiwin. The assistance of the Alberta Dairymen's Association and the Red Deer Fair Board contributed greatly to the success of the show.

A Provincial Dairy Club Record Book Competion was inaugurated during the year. This is being sponsored by the Alberta Dairymen's Association in co-operation with the Department. The competition involves selection of the best record book in the province. The winner annually selected is to be the guest of the Alberta Dairymen's Association at their convention.

Swine Clubs

Ten clubs were active in this project during the year. The assistance of the Canada Department of Agriculture in supplying boars and in providing a carcass scoring service for swine club members has added much to the project.

Sheep Clubs

One new club was organized in this project this year and a number of rams were supplied to all clubs by the Canada Department. A feeding record book was produced and distributed to all club members.

Field Crops Clubs

A complete change in grain clubs was initiated early in 1959. This change involved the establishment of eight projects in place of one offered previously. These are as follows: (1) Junior Project—Varietal Rod Row Plot; (2) Intermediate Project—One to Three Acre Seed Plot; (3) Senior Projects—(a) Rod Row Fertilizer Trial Plot, (b) Two Acre Fertilizer Trial Plot, (c) Two Acre Seed Treatment Plot, (d) Two Acre Seed Treatment Fertilizer Test Plot, (e) Two Acre Forage Test Plot, (f) Two Acre Forage Fertilizer Test Plot.

Regulations were established permitting any or all of these projects to be carried in a single club. The only stipulation being that at least three members carry any one project.

This new system of projects allows for progression and an opportunity for members to select what they desire the most in field crops work.

A Project Guide and Junior, Intermediate and Senior Record books were drawn up for use of members carrying these new projects.

This first year of these new projects saw 447 members carrying the junior, 567 the intermediate and 140 the senior projects. It is hoped that the program will give renewed interest to this phase of 4-H.

Winners in the Provincial Plot Competition were: Junior Project—Dorothy Swaren, Barons; Intermediate Project—Darryl Smith, Bow Island; Senior Project—Gary Gibson, Acme.

The sixteenth annual Provincial Junior Seed Fair was held in conjunction with the Calgary Chamber of Commerce Seed Fair and Short Course. There were a total of 220 samples entered in the 12 classes. Three new classes introduced allowed for single entries from clubs rather than individuals.

HOME ECONOMICS PROJECTS

Clothing Clubs

The clothing project continues to be the most popular project with an increase of 13 clubs.

The revision of the first and second year project books were completed in time to be used this year. A start has been made on the revision of the third year book. Successful achievement days were held in May with a high standard of work being apparent. Three members were again selected from the clothing project to attend National Club Week.

Eight sewing courses for 4-H leaders were conducted which stressed construction and methods necessary for the first and second year.

Food Clubs

In the food projects there was an increase in clubs and membership. Again this year only one delegate was sent to National Club Week from the combined food and home decoration clubs.

Home Decoration Clubs

More interest is being shown in the home decoration clubs although at the present time there is only four clubs in operation. Where carried on, they proved most successful.

The T. Eaton Company again presented pinking shears and timers to the winners in each food, clothing and home decoration club. 88 awards were made in clothing clubs, 15 in foods, and 3 in home decoration.

Garden Clubs

Garden clubs continued to be the second most popular project with 44 organized this year.

All garden plots were judged by the district or headquarters staff with assistance from the Alberta Wheat Pool fieldmen or district agriculturists.

The Alberta Wheat Pool awarded 44 prizes for the best garden plot in each club and 15 awards for obtaining the highest standing in each district home economist's district. The latter was in the form of a book to be added to the club library. This year the book was "Manners Made Easy".

Those garden clubs receiving this award were High Prairie, Ridgeview, Willowdale, Namao, Tomahawk, Blueberry Mountain, Clive, Skaro, Markerville, Champlain, Gadsby, Innisfree, Paradise Valley, Flatbush, and Pipestone.

Two members from the garden clubs were again selected to attend the Alberta Locker Association Convention. These were Della McPhee of Byemoor and Sophie Tkatchuk of Gibbons.

The girls gave a demonstration on "Frozen Dinners".

Report of the Radio and Information Branch

E. B. SWINDLEHURST, Supervisor

E. V. Hamula, Senior Commentator
C. Scott Flewitt, Commentator
Miss D. R. Rodney, Secretary-Writer

Useful and authoritative information on matters of farm interest is the objective of the Radio and Information Branch.

Broadcast from ten Alberta stations, the radio program "Call of the Land" continues to meet with favourable response. Now in its seventh successive year, it brings to rural listeners a wealth of useful information from many sources.

The weekly releases "Science and the Land" and "Farm Notes" provide reports of research in the field of agriculture and offer timely suggestions from Department specialists. To all who have contributed towards success of these endeavours go our sincere appreciation and thanks.

Early in the year, following resignation of Mrs. R. Scinta, Miss D. R. Rodney was appointed Secretary-Writer.

Radio Production

During 1959 CJDV Drumheller, CKSA Lloydminster and CJOC Lethbridge were added to the list of radio stations airing "Call of the Land". The program, a Monday to Friday noonday farm radio feature, was broadcast 261 times on each of seven other Alberta stations. Following is the complete roster of stations now broadcasting "Call of the Land".

CKUA Edmonton	12:20 p.m.	GKSA Lloydminster	12:50 p.m.
CFRN Edmonton	12:45 p.m.	CJDV Drumheller	12:50 p.m.
CFGP Grande Prairie	12:05 p.m.	CFCN Calgary	1:00 p.m.
CFCW Camrose	12:05 p.m.	CJOC Lethbridge	1:05 p.m.
CKRD Red Deer	12:45 p.m.	CHAT Medicine Hat	1:05 p.m.

Among the primary objectives of the radio personnel in this branch is making the best possible use of radio as an agricultural information medium. In addition contributions are made to television and newspapers as occasions arise. To best achieve this, effort is continually being made to provide material of a variable and appealing nature to as many rural homes as possible. Again this year attention was concentrated on variety, preciseness and timeliness. Liaison and service to commercial farm radio and television personnel, on-the-spot reports and interviews, advertising of Alberta Department of Agriculture services, emphasis on farm safety, emergency situations as well as agricultural conventions, conferences and special events, all received attention.

Of note is the increased interest in the radio program during the past year as well as more recognition by commercial and farm organizations of this branch as a focal point of farm information.

"Call of the Land" is produced, recorded and distributed from the studios of the Radio and Information Branch in the Terrace Building. Excellent co-operation was received from the engineering and managerial staff of CKUA, Edmonton. This year technical facilities of CKUA were used for the direct transmission of a total of twenty-eight broadcasts to and from other parts of the province.

Evaluation

Listener surveys and listener inquiries indicate increasing interest and awareness in the radio broadcasts. A commercial survey corporation, the Bureau of Broadcast Measurement, in a survey conducted early in the year showed that approximately 40,000 radio sets were tuned in daily to the ten Alberta radio stations broadcasting "Call of the Land" at the time that the show was on the air. These included both rural and urban radios, indicating that the broadcast has considerable consumer appeal.

To evaluate rural popularity is rather difficult. Apart from a mail survey, telephone calls from rural listeners are the only method of gauging this important factor. This year, on numerous occasions as many as two to three dozen telephone calls or letter requests were received shortly after broadcasts were aired. It is too cumbersome to record the total number of requests for additional information at district agriculturists' offices as a result of the radio program, therefore such records are not kept. However, requests referring specifically to "Call of the Land" or the Department of Agriculture radio broadcast in connection with the recently released "Alberta Farm Guide" were estimated to be well over 1,000 at the Department's publications office in the Legislative buildings.

Such response makes it increasingly evident that this branch is supplying an essential and highly rated service to the province.

Programming

In gathering material a great deal of effort is put into providing an interesting variety of material pertaining to all phases of farming in Alberta. This year still more attention was given to variety of presentation as well as consumer items. More items per broadcast were aired. On-the-spot reporting nearly doubled over previous years. Editorial commentaries were made often while panel discussions were cut almost entirely.

The following table illustrates these trends during the past four years of broadcasting.

	Number of Programs			
Type of Programming	1959	1958	1957	1956
The Personality interview	63	108	109	168
On-the-spot reports and interviews	145	95	70	33
Misc. items and announcements	27	29	31	43
Editorial (by commentators or guests)	23	19	35	15
Panel discussions	2	9	15	0
Musical (Special days—Christmas)	1	1	1	2
	261	261	261	261

To maintain an interesting and fast moving show, time limitations of 4 to 5 minutes are placed on interviews and 2 to 3 minutes on commentaries. Announcements and other items are edited down to less than one minute each. With such a policy it is possible to carry as many as 8 items per broadcast. This year 1,034 items were aired on 261 shows. This was an increase of 322 over last year.

The following table shows the nature of the material used and the number of times dealt with during the year, as compared to the two previous years.

Nature of Material	Incidence 1959	1958	1957
General Agriculture (Including world and national items)	139	73	106
Livestock	221	159	90
Field Crops	169	149	122
Farm Safety	60	56	22
Farm Management	42	51	21
4-H	42	29	15
Poultry	30	27	18
Dairying	60	26	26
Veterinary Science	16	22	26
Horticulture	32	21	22
Farm Mechanics	38	18	12
Agricultural Pest Control	28	15	11
Schools of Agriculture	18	13	19
Beekeeping	14	7	8
Fur Farming	8	6	6
Misc. (Consumer topics, announcements etc.)	117	35	69
	1,034	712	593

Sources of personality appearances for the year as compared to the previous three years were as follows:

	Number of Appearances 1959	1958	1957	1956
Alberta Department of Agriculture	100	91	85	215
Other Alberta Govt. Departments	28	27	12	13
Canada Dept. of Agriculture	16	8	21	17
University of Alberta	11	15	8	16
Farm People (Including 4-H)	125	109	128	128
Others	61	44	108	61
	341	294	362	404

To provide the desired variety and local color for each show, extra travel to all parts of the province as well as many special programs are necessary. Among the special series were seven daily features originating from the Royal Winter Fair. For the second year in succession these were relayed to the radio stations by Alberta Government Telephones' network each morning, thus providing an up-to-date reporting service. In addition daily night press letters reports of Alberta winnings at the "Royal" were supplied to five radio stations, two television stations and one Alberta daily newspaper. This was the fifth successive year in which reports to Alberta from the "Royal" were made. The assignment was handled by Ed. Hamula, who also worked in close liaison with the Alberta Department of Agriculture and Provincial Secretary officials at the fair as well as the Canadian Broadcasting Corporation and other press personnel. The speed and quality of this service have now gained prominent recognition among the writing fraternity.

The tape service instituted three years ago was continued but without expansion. Thirty-five items containing agricultural information varying from short spots to 3 minute interviews were made available for distribution to radio stations during the year. The majority of these were compiled in co-operation with the Farm Director of the Alberta Safety Council. The burdensome nature of the service has forced curtailment until additional staff is acquired.

Agricultural conventions attended and reported from were: the Alberta Federation of Agriculture, the Alberta Dairymen's, Western Stock Growers, Alberta Seed Growers and Alberta Quick Freeze Locker Associations, as well as the Natural Resources, Alberta Wildlife and Alberta Safety Conferences. The Calgary and Edmonton Spring and Fall livestock shows and sales were also attended along with similar ones at Lacombe and Lloydminster.

Special coverage was also given to the Edmonton, Calgary, Red Deer and Wetaskiwin exhibitions. Other "specials" were in connection with National Farm Safety Week, a regular series with the Alberta Department of Public Health, the Sorghum Almum problem, Agricultural Short courses and clinics, Rural Life in Russia with Larry Henderson of the C.B.C. and Ross Henry of CFCN Calgary, Master Farm Family award winners, the fall harvest crisis, farm and home planning programs, grain drying and the Provincial Seed Fair.

During 1959 twenty-three programs featured guests from other countries. They included 17 from the United States, 4 from the United Kingdom, one from New Zealand and one from Australia.

This Branch sincerely appreciates the excellent co-operation received from the Departments of Lands and Forests, Public Health, Municipal Affairs as well as the Provincial Secretary's department who assisted in making many of the above programs possible. Also appreciated is the fine association with the many agricultural organizations in the country as well as the University of Alberta, the Canada Department of Agriculture and the Canadian Farm Writers Federation.

As of December 31, this branch has produced 1,762 continuous Monday through Friday farm broadcasts.

Science and the Land

Prepared in co-operation with research personnel, Science and the Land was again distributed weekly to press, radio, government offices, commercial concerns and libraries. Written in popular form, this release contains progress and results of experiments at the various agricultural research centres in Alberta.

Periodic visits were made during the year to the various sections of the Canada Department of Agriculture Research Station at Lethbridge, to the Experimental Farms at Lacombe and Beaverlodge, to the Plant Pathology Laboratory in Edmonton, and to the Departments of Animal Science, Plant Science, Soils, Entomology and Botany at the University of Alberta. Also attended during the year were annual meetings of the Alberta section of the Canadian Phytopathological Society and of the advisory committees on cereals, fertilizers, forage crops, horticulture, weeds and pests.

Every assistance was offered in the course of these visits and excellent relations prevailed. Perusal of reports and theses together with observation and discussion with the scientists concerned resulted in preparation during the year of sixty-nine releases. These covered a variety of subjects including soils, cereals, forage crops, horticulture, livestock, weeds, pests and diseases.

Requests from elevator companies during the year for copies for their agents resulted in a substantial increase and raised distribution of both Science and the Land and Farm Notes from the previous 800 to 1,800 copies weekly.

Farm Notes

Fifty-two releases of Farm Notes this year contained 303 items of farm and homemaking interest. Prepared by the Secretary-Writer from information obtained from Department specialists, they contained a diversity of subject matter and presented timely hints and pertinent information in a concise and interesting manner.

Distributed to key personnel and used widely by radio, by Alberta daily and weekly newspapers, and by farm publications across the country, they provide a useful channel for dissemination of authoritative and timely information.

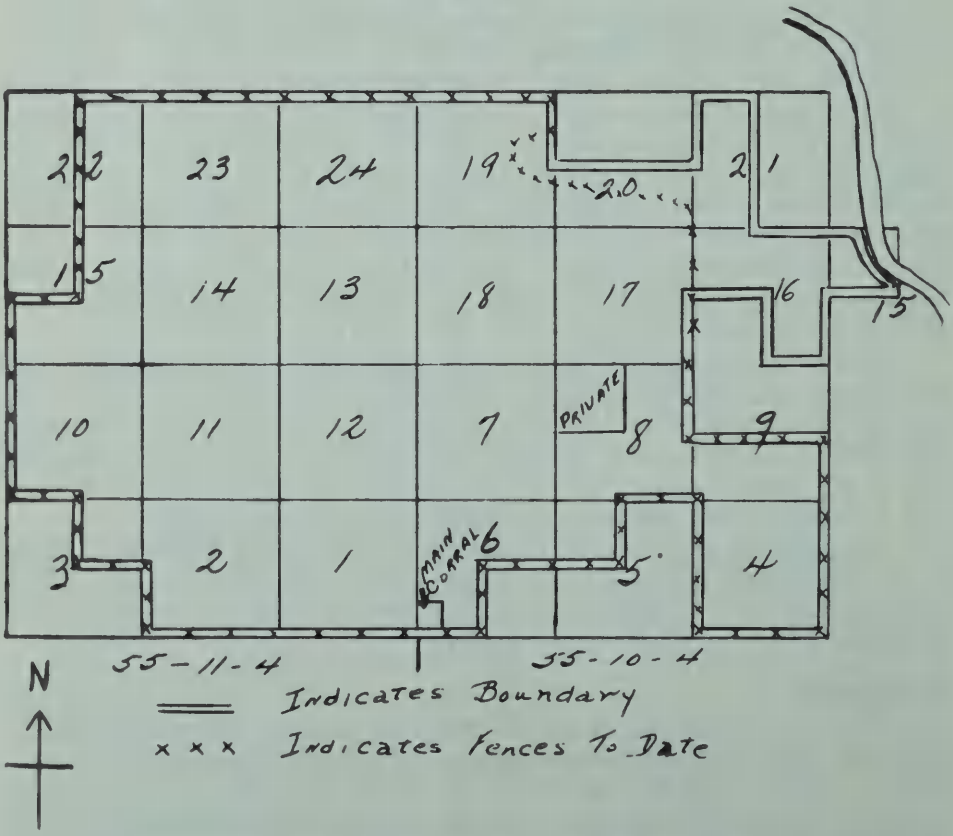
Report of the Land Conservation and Utilization Committee

G. R. STERLING, Chairman

The personnel of the Land and Forest Utilization Committee remained the same as in the 1956 report. Four meetings were held during the year.

Rannock

The Government completed purchases on the following lands and added them to Rannock Community Pasture: E½ 22, E½ and SW 15, Sec. 10 and NE 3, all in 55-11-4 and the E½ 21, N½ and SE 16, NW 15, S½ 9 and Sec. 4, all in 55-10-4. All were seeded to grass except the E½ 21 and S½ 4, which were acquired too late for seeding. A house and other buildings were acquired on the SE 4-55-10-4 to be used as headquater location. A small office shack was built at the corral location. The following sketch indciates the lands envolved in this pasture and location of fences.



The pasture was officially opened on June 29th by Mr. R. M. Putnam, Deputy Minister of Agriculture. Only 180 head were pastured because the management committee wished the grass to become well established.

Wanham Demonstration

Demonstrations with fertilizers were continued on the 4 farms as listed on page 202 of the 1958 Department of Agriculture report. Fertilizers gave results on only 2 farms and detailed results are on file.

Wanham Pasture Project

The Department of Lands and Forests requested the committee to investigate and recommend on proper use for some lands in Block 1 of the Waham Clearing and Breaking Project. The committee recommended and the Government approved of a pasture in the area. At the close of the year the following lands were put into the pasture and all were seeded to a forage mixture. Grass catch was only fair.

"Sec. 22, 23, S½ 26, W½ 24 all in 79-3-6, Sec. 19, W½ 20, N½ 21, W½ 27, W½ 28, E½ 29, Sec. 33, E½ 34, E½ 35, all in 79-2-6 and S½ 3-80-2-6."

A farm home located on the E½ 29-79-2-6 was acquired as a headquaters.

M. D. Of Wetaskiwin

This pasture was held up pending Department of Lands and Forests multiple use area. However, this was finalized by the close of the year and development will commence in the spring of 1960.

M. D. Of Minburn

The following lands have been acquired and seeded in the first block of land to be developed: Secs. 5, 6, 7, 8, 17, 18 and S½ 20, all in 49-9-4 and Secs. 1, 12, 13 and SE 24 all in 49-10-4. The W½ and NE 24-49-10-4 have been acquired but not seeded.

The Government approved the purchase of Secs. 18-22 and 27-34 all in 48-9-4. At the close of 1959 the following were acquired: Secs. 18, E½ & SW 21, N½ 20, NE 28, 30, 32, NW and S½ 34, all in 48-9-4.

A farm home on the SW 32-48-9-4 was acquired for headquarters.

M. D. of Westlock

The Government approved of a pasture project in this area, namely, Secs. 13-16 inclusive, 21-28 inclusive and 33-36 inclusive, all in 61-23-4. This was delayed on request from the Municipal District but late in the year the municipal council asked the committee to proceed with the project.

Green Yellow Area

Letters offering to purchase land in the green area in All of I.D. 50, that portion of I.D. 58 in Twps. 31 and 32, Rge. 7, W of the 5th, that portion of the Municipal District of Mountain View in the W½ of Twps. 29 and 30, Rge. 5, W of the 5th, and that portion of the Municipal District of Mountain View in Twp. 29-6-5 were mailed to each owner. This offer was withdrawn because local people of the area in question objected very strongly.

The Chairman in company with one or more municipal officials checked problem areas in the counties of Ponoka and Thorhild and the Municipal District of Stony Plain.

Miscellaneous Problems

The committee spent a half day meeting with regard to spoil pits around old coal mies, gravel quaries, etc, and recommended that a small vote be made available to reclaim such spoil banks.

A request was received from the Department of Municipal Affairs to investigate the sale of land on past of Section 2 in 47-19-4, which was in the green area. Sale of same was rejected.

The Eastern Irrigation District asked the committee to investigate and determine whether certain lands in the E.I.D. should be sold to a U.S.A. concern. The committee recommended against such sales.

Whitford Lake was discussed and left for Mr. Grindley of Water Resources to handle. This involved a drainage problem.

Low Water Lake, which is near Edmonton, was discussed but tabled for one year.

A request was forwarded to the committee by Municipal Affairs with regard to a farm problem. Recommendation as to how the problem should be handled was made to Municipal Affairs.

Soil and Feed Testing Laboratory

G. R. Sterling was a members of the Supervisory Committee of the Agricultural Soil and Feed Testing Laboratory. One meeting was held. The following table shows the samples handled during the last 4 years.

1965	1,543
1957	1,649
1958	2,378
1959	2,219

Below is a table showing the different samples analyzed and a break down of the feed samples. Note that 455 samples of feed were submitted but analysis was done on 571 feeds because some samples were analyzed for more than one thing.

	Feeds	Farm Soils	Greenhouse Soils	Total for Quarter
January 1-March 31	186	242	177	605
April 1-June 30	54	517	68	639
July 1-September 30	33	294	71	398
October 1-December 31	182	316	79	577
Total for Year	455	1,396	395	2,219

BREAKDOWN OF FEED SAMPLES ANALYZED

	Grains	Hays	Silages	Special* Analyses	Total for Quarter
January 1-March 31	47	99	38	64	248
April 1-June 30	20	17	16	13	66
July 1-September 30	14	19	......	14	47
October 1-December 31	37	106	19	48	210
Total for Year	118	241	73	139	571

Nitrates; Prussic Acid; Carotene; Fat.

Report of the Board of Trustees
OF THE SURPLUS WHEAT BOARD MONIES TRUST ACCOUNT

HONOURABLE L. C. HALMRAST, Chairman

R. M. Putnam, Deputy Minister of Agriculture
H. W. Gaebel, Secretary, Department of Agriculture
Richard Ballhorn, Farmer, Wetaskiwin, Alberta
Arthur Pierson, Vice-President and Treasurer of the Independnet Grain Co., Calgary

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Receipts for the year ending December 31, 1959 totalled $3,533.41 all of which was in payment of interest on investments.

Payments for the year ending December 31, 1959 amounted to $3,980.00 and were made up as follows:

Scholarships and Bursaries	$3,950.00
Meeting Expenses	30.00
Total	$3,980.00

Detailed statement of receipts and expenditures, along with a statement of assets and liabilities is attached hereto.

Investments

Government of Canada	3¾%	debentures	$ 2,500.00
Province of British Columbia	3 %	"	45,000.00
Province of New Brunswick	3½%	"	45,000.00
Ontario Hydro Electric	4¼%	"	4,000.00
Province of Newfoundland	3¾%	"	4,000.00
City of Calgary	3½%	"	4,000.00
Total			$104,500.00

Meetings

A meeting of the members of the Board was held on July 8th, 1959, and scholarships and bursaries totalling $3,650.00 were made available for the coming year.

General

The Board has continued the policy of conserving the principal remaining in the Trust Fund, making all expenditures from income received on investments.

Since the Board instituted the policy of providing scholarships and bursaries, the sum of $37,241.26 has been paid out for this purpose, totalling 442 in number.

List of Scholarship Winners Named During 1959

4-H Club Winners—$100.00 each

Jack Olson, Red Deer
Arnold Rand, Innisfail
Merlyn Wilson, Bentley
Terry Vickerson, Sexsmith
Carol Marquardt, High Prairie
Jean Steeves, Sexsmith
Elaine Nord, Ryley
Angeline Zaharko, Bruderheim
Sandra Pierece, Mapova
Erwin Yule, Gleichen
Barry Rust, Millicent
Robert Crow, Barons
Dianne Stuart, Clive
Valarie Pointen, Calgary
Evelyn Gallinger, Buck Lake
Warren Henderson, Forestburg
Johnny Kampjes, Gibbons
William Golby, Pembridge
Hazel Walker, Endiang
Rose Kubejko, Breton
Margaret Lynn Davidson, Vermilion

To University of Alberta from Agricultural Schools—$150.00 each

Norman Bauer, Hilda
Gerald J. Mears, Peace River

University of Alberta Young Peoples Week—$100.00 each

Jean Blight, Conrich
Allan Hirsch, New Sarepta

Bursaries Awarded to Young People Attending an Agricultural School—100.00 each

Donald Paul Smith, Olds
Vernard L. Stirton, Olds
Patricia May Nelson, Sundre
Glen Robert Bulmer, Berwyn
Allan Gordon Gordeyko, Ohaton
Lorne Leroy Sheets, Camp Creek
Oswald Sokoloski, Peace River
Douglas Smith, Champion

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
Balance Sheet as at December 31, 1959

ASSETS

Investments:	Par Value	Book Value
Government of Canada 3¾% due January 15/78	$ 2,500.00	$ 2,518.40
Province of British Columbia 3% due December 15/68	45,000.00	44,769.26
Province of New Brunswick 3½% due April 1/67	45,000.00	44,900.78
Ontario Hydro Electric 4¼% due November 1/67	4,000.00	3,964.28
Province of Newfoundland 3¾% due June 1/76	4,000.00	3,888.72
City of Calgary 3½% due July 1/68	4,000.00	3,995.20
		$104,036.64
Cash in Bank		2,657.10
Accrued Interest		619.91
		$107,313.65

LIABILITIES

Trust Fund December 31, 1958	$107,707.01
Less: Deficit for 1959	393.36
	$107,313.65

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
Accrued Interest as at December 31, 1959

Government of Canada Debentures:			
$2,500.00 3¾%, January 15/78, 5½ months			$ 42.96
Province of British Columbia Debentures:			
$45,000.00 3%, December 15/69, ½ month			56.25
Province of New Brunswick Debentures:			
$45,000.00 3½%, April 1/67, 3 months			393.75
Ontario Hydro Electric Debentures:			
$4,000.00 4½%, November 1/67, 2 months			28.33
Province of Newfoundland Debentures:			
$4,000.00 3¾%, June 1/76, 1 month			12.50
City of Calgary Debentures:			
$4,000.00 3½%, July 1/68, 6 months			70.00
Bank Interest:			
November 1958	$4,207.10 @ 1¾%	$ 6.05	
December 1959	2,757.10 @ 1¾%	4.10	10.15
			$ 613.94
Add: Accum. of Discount:			
Accrued on Province of British Columbia		$ .96	
" " Province of New Brunswick		3.31	
" " Ontario Hydro Electric		1.19	
" " Province of Newfoundland		.80	
" " City of Calgary		.26	
		$ 6.52	
Less: Amor. of Premium:			
Accrued on Government of Canada		.55	5.97
Net Earnings Accrued to December 31, 1959			$ 619.91

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
Statement of Receipts and Payments for the Year ended December 31, 1959

Bank Balance December 31, 1959		$ 3,103.69
Interest on $ 2,500.00 Government of Canada Debentures	$ 93.74	
" " 45,000.00 Province of British Columbia	1,350.00	
" " 45,000.00 Province of New Brunswick	1,575.00	
" " 4,000.00 Ontario Hydro Electric	170.00	
" " 4,000.00 Province of Newfoundland	150.00	
" " 4,000.00 City of Calgary	140.00	
" " Bank Balances	54.67	
		$ 3,533.41
		$ 6,637.10
Deduct Payments:		
Scholarships—Vermilion School	$ 2,500.00	
" —Olds School	1,000.00	
" —University of Alberta	450.00	
Meeting Expense—Richard Ballhorn	10.00	
" " —A. Pierson	20.00	
		3,980.00
		$ 2,657.10

Report on Farm Credit

G. R. STERLING, Executive Assistant and Chairman, Advisory Committee

R. C. Moffat, Farm Credit Administrator and Secretary, Advisory Committee

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Mr. Moffat was appointed on May 18th, 1959, to fill the position of Farm Credit Administrator. He also acts as Secretary to the Provincial Advisory Committee.

Farm Purchase Credit Act

During the fiscal year April 1st, 1958 to March 31st, 1959, the Provincial Advisory Committee approved 164 applications, committing a total of $650,222.00 in Government loans.

The following is a report on the activities associated with the Act since its inception in 1957 up to and including December 31st, 1959. There are now 65 Farm Purchase Boards operating in Alberta. The following is a list of the Counties, Municipal Districts and Improvement Districts which formed Boards up to and including December 31st, 1959, along with a listing of applications which were forwarded for consideration by the Provincial Advisory Committee.

District	Applications Sumitted to Prov. Committee	Approved	Rejected	Withdrawals	Hold for more Information	Value of farm Land	Loans
M.D. Bonnyville No. 87	9	7	1	1	......	$ 63,100.00	$ 29,800.00
" Camrose No. 63	5	4	1	......	......	42,100.00	21,050.00
" Cardston (Western) No. 6	22	18	3	1	......	209,620.00	89,380.00
" Cardston (Eastern) No. 6	2	2	......	......	......	11,800.00	5,200.00
" Eagle No. 81	13	10	3	......	......	89,800.00	43,600.00
" Flagstaff No. 62	......	......	......	......	......	......	......
" Foothils No. 31	5	5	......	......	......	79,828.00	38,600.00
" Kneehill No. 48	......	......	......	......	......	......	......
" Lac Ste Anne No. 93	......	......	......	......	......	......	......
" Lamont No. 82	35	22	10	1	2	220,300.00	102,450.00
" Leduc No. 75	18	15	2	......	1	156,925.00	74,862.50
" Lethbridge No. 25	16	11	4	......	1	156,450.00	65,045.00
" Minburn No. 72	31	25	5	1	......	244,400.00	110,130.00
" Mountain View No. 49	14	8	6	......	......	80,700.00	37,050.00
" Paintearth No. 53	20	20	......	......	......	160,950.00	69,895.00
" Peace No. 135	......	......	......	......	......	......	......
" Rocky View No. 44	15	11	2	......	2	147,243.95	65,564.45
" St. Paul No. 86	3	3	......	......	......	29,000.00	14,500.00
" Smoky Lake No. 89	......	......	......	......	......	......	......
" Starland No. 47	7	4	3	......	......	33,840.00	16,920.00
" Stony Plain No. 84	6	4	1	......	1	27,500.00	12,050.00
" Strathcona No. 83	5	3	1	......	1	30,250.00	13,175.00
" Sturgeon River No. 90	10	6	3	......	1	97,020.00	42,230.00
" Vermilion River No. 71	10	7	......	......	3	106,700.00	50,750.00
" Wainwright No. 61	3	3	......	......	......	43,000.00	21,500.00
" Westlock No. 92	32	22	9	1	......	183,050.00	86,825.00
" Wheatland No. 40	6	6	......	......	......	86,280.00	35,500.00
" Willow Creek	20	16	4	......	......	240,160.00	112,674.00
Country Athabasca No. 12	7	3	1	1	2	8,250.00	3,750.00
" Beaver No. 9	43	33	7	1	2	343,950.00	141,320.00
" Forty Mile No. 8	21	19	......	......	2	195,471.27	84,798.13
" Grande Prairie No. 1	26	20	4	......	2	210,300.00	93,300.00
" Newell No. 4	4	3	1	......	......	40,400.00	15,360.00
" West Ponoka (Rimbey) No. 3	17	10	5	......	2	79,300.00	36,570.00
" East Ponoka No. 3	18	14	3	1	......	163,500.00	72,700.00
" Stettler No. 6	4	2	2	......	......	22,000.00	11,000.00
" Thorhild No. 7	8	4	2	......	2	35,250.00	15,125.00
" Vulcan No. 2	36	30	2	2	2	421,300.00	166,960.00
" Warner No. 5	9	7	2	......	......	128,000.00	52,850.00
" Wetaskiwin No. 10	......	......	......	......	......	......	......
Special Areas No. 2	40	33	2	3	2	293,420.00	135,428.00

District	Applications Sumitted to Prov. Committee	Approved	Rejected	Withdrawals	Hold for more Information	Value of farm Land	Loans
Special Areas No. 3	6	6	......	......	......	72,000.00	30,350.00
I.D. No. 42	......	......	......	......	......	......	......
" No. 11	5	2	2	1	......	24,700.00	9,880.00
" No. 22	2	1	1	......	......	16,000.00	8,000.00
" No. 58	......	......	......	......	......	......	......
" No. 65	14	7	7	......	......	41,500.00	19,750.00
" No. 77	......	......	......	......	......	......	......
" No. 78	6	6	......	......	......	19,250.00	8,575.00
" No. 95	1	1	......	......	......	10,000.00	5,000.00
" No. 101	6	4	2	......	......	17,000.00	6,850.00
" No. 102	14	7	6	1	......	42,700.00	17,480.00
" No. 107	2	2	......	......	......	8,200.00	3,840.00
" No. 108	1	1	......	......	......	3,500.00	1,750.00
" No. 109	1	1	......	......	......	11,000.00	5,500.00
" No. 124	......	......	......	......	......	......	......
" No. 125	2	1	1	......	......	2,000.00	800.00
" No. 126	1	......	......	1	......	......	......
" No. 131	1	......	1	......	......	......	......
" No. 132	1	......	1	......	......	......	......
" No. 134	3	2	1	......	......	13,500.00	5,750.00
" No. 138	5	2	3	......	......	17,000.00	6,800.00
" No. 139	......	......	......	......	......	......	......
" No. 146	1	1	......	......	......	6,000.00	3,000.00
" No. 147	1	1	......	......	......	4,900.00	2,450.00
TOTALS = 65	613	455	114	16	28	$4,790,408.22	$2,122,687.08

Of the 455 applications approved, 301 applications have been approved in 1959, with $1,508,643.08 committed in loans for the twelve month period.

Farm Purchase Boards for I.D. No. 111 and M.D. of Lacombe No. 64 were in the process of being formed. Of the 9 M.D.s and Counties in the Province which have not yet formed Farm Purchase Boards, three have planned to form Boards early in 1960.

The Chairman or Secretary visited 42 different Farm Purchase Board meetings during 1959, and met with M.D. Councils on 10 occasions to discuss the Farm Purchase Credit Act.

The Provincial Advisory Committee held 22 meetings during the year, and met a total of 39 times since the Act was passed in 1957.

Farm Home Improvement Act

The Farm Home Improvement Act was assented to on April 7, 1959. After the regulations were drafted, a supply of application forms and brochures were fowarded to all Bank and Treasury Branch Divisional Offices. The first loans were put out in October.

The following is a breakdown of the loans granted in 1959:

Banks	Address	No. of Loans Approved	Total Loans Approved
Treasury Branch	Hanna	1	$ 2,000.00
'' ''	Granum	1	2,000.00
'' ''	Rocky Mtn. House	3	4,450.00
'' ''	Vermilion	2	2,700.00
'' ''	Rycroft	3	2,800.00
'' ''	Coronation	3	4,700.00
'' ''	Olds	1	2,000.00
'' ''	Ryley	1	1,500.00
'' ''	Vegreville	4	7,000.00
'' ''	Killam	2	2,000.00
'' ''	Red Deer	1	1,400.00
'' ''	Innisfail	1	1,400.00
'' ''	Andrew	1	2,000.00
'' ''	Falher	1	2,000.00
'' ''	Barrhead	1	2,000.00
'' ''	Vulcan	1	2,000.00
'' ''	Grande Prairie	1	1,500.00
'' ''	Stettler	3	5,325.00
'' ''	Wetaskiwin	1	1,900.00
		32	$50,675.00

The local Bank or Treasury Branch accepts an application for the farm home loan. If approved by the Bank or Treasury Branch, the applicatoin and promissory note must be endorsed by the Treasury Department before the loan is guaranteed under the Act.

Report of the Alberta Civil Defence Branch

1st January, 1959 to 31st December, 1959

Appendices

"A"—Organization Details.

"B"—Order-in-Council PC 1959-656 (Civil Defence Order 1959).

"C"—Statement by the Government of Canada on Policy con-concerning Evacuation and Shelter for Civil Defence purposes.

"D"—Training Details.

"E"—Operational Details.

1. **Chief Administrative Officials:**

(a) Co-ordinator	—A/V/M G. R. Howsam
(b) Deputy Co-ordinator	—Lt/Col A. J. Lavoie
(c) School Commandant	—F. G. Jamieson
(d) Chief Director, Administration and Supply	—E. Tyler
(e) Chief Director, Operations and Training	—T. H. Gladders

2. Civil Defence in Alberta is organized and administered on a provincial and municipal basis. The vast majority of persons engaged in this work voluntarily donate their time and services without remuneration, a very small percentage is employed full-time—or part-time—on administrative and secretarial duties.

3. The factors which make Civil Defence an essential aspect of present day existence are, to prevent an unnecessary loss of life and to ensure the continuity of civil government in the event of a thermonuclear attack against this continent.

4. The report which follows—together with appendices—covers the calander year 1959, and is divided into four main parts:

PART ONE: ORGANIZATION

Authority

5. Civil Defence is authorized by the Alberta Civil Defence and Disaster Act and its amendments. The Act was assented to on 7th April, 1951. The controlling and administrative authorities are:
   (a) The Cabinet Committee for Civil Defence, consisting of the Honourable E. C. Manning, Premier; the Honourable L. C. Halmrast, Minister of Agriculture and Minister-in-Charge of Civil Defence, (Chairman of the Committee); the Honourable A. R. Patrick, Minister of Industry and Development and Provincial Secretary; and the Honourable F. C. Colborne, Minister without Portfolio.
   (b) The Honourable L. C. Halmrast, Alberta Minister-in-Charge of Civil Defence;
   (c) Air Vice-Marshal G. R. Howsam, Provincial Co-ordinator of Civil Defence;

(d) Advisory Committee on Civil Defence, consisting of the Federal Representative; the Alberta Civil Defence Co-ordinator; the G.O.C. Western Command or his representative; and the Assistant Commissioner of the R.C.M.P.

Headquarters Staff

6. The Alberta Civil Defence Headquarters (A.C.D.H.Q.) Staff comprises 18 Committees, including a Co-ordinating Committee and Committees for Agriculture, Communications, etc., together with Liaison Officers from the Armed Services. Most of the Headquarters Staff are unpaid voluntary workers representing branches of the Government, the University, the Professions, Commerce and the Military Forces. The small full-time Secretariat includes the staffs of the Peace River, the Northern, the Central and the Southern Zones.

Headquarters Meetings (Evening)

7. Headquarters meetings are held on the first and third Tuesday of each month, except during the months of July and August. In addition, special staff meetings are held whenever required by each Committee.

Committee Meetings

8. Individual Committee meetings are held as necessary at the discretion of the Committee Chairman or by request of the Co-ordinator. Thus, advice by experts in their field is available to the Minister and the Co-ordinator at all times.

Municipal Organization

9. At the date of this report, a total of 170 municipalities have established, or are in the process of establishing, Civil Defence Organizations. (See Appendix "A", paragraph 1, for details).

10. Though Civil Defence in each municipality is a direct municipal responsibility, A.C.D.H.Q. furnishes all possible assistance and co-operation in the execution of Civil Defence programmes. Close liaison between A.C.D.H.Q. and municipalities is maintained, and to date over 2,089 visits have been made to municipalities by senior members of A.C.D.H.Q. Staff. (See Appendix "A", paragraph 2 for details).

Civil Defence Zones

11. For Civil Defence purposes, Alberta is divided into four Zones, as follows:

    (a) Peace River Zone, which includes all of the Peace River, administered—under the supervision of A.C.D.H.Q.—by Peace River Zone Headquarters, located in Grande Prairie, and consisting of one full-time Staff Officer.

    (b) Northern Zone, surrounding the City of Edmonton, administered—under the supervision of A.C.D.H.Q.—by Northern Zone Headquarters, located in Edmonton and consisting of two full-time Staff Officers.

    (c) Central Zone, surrounding the City of Calgary, administered—under the supervision of A.C.D.H.Q.—by Central Zone Headquarters, located in Calgary and consisting of two full-time Staff Officers.

    (d) Southern Zone, which includes the Lethbridge-Medicine Hat area, administered—under the supervision of

A.C.D.H.Q.—by Southern Zone Headquarters, located in Lethbridge and consisting of one full-time Staff Officer.

Far Western Association of Civil Defence Directors

12. The aim of this Association is to ensure the co-operation of its members in all Civil Defence matters affecting the western portion of North America. Membership consists of nine states of the western United States, together with the State of Hawaii. The Canadian provinces of British Columbia, Alberta and Saskatchewan are associate members.

Civil Defence Communications

13. **General.** Under the Civil Defence Order 1959 the responsibility for emergency communications would end at Federal/Provincial Emergency Headquarters. Additional emergency communications within each Province will remain the responsibility of the province, with Federal assistance made available under the Financial Assistance Programme.

14. **Planning.** Emergency communications planning in this province is based on the maximum utilization of existing facilities. Alberta Civil Defence will continue to use the main media of communications—telephone, telegraph and radio—so long as they remain in existence. These facilities will be controlled and co-ordinated for emergency operations, from Civil Defence Communications Centres.

15. **Telephone.** Under an agreement with Alberta Government Telephones, Civil Defence calls will be given priority rating by the telephone offices. This will ensure the most effective use of telephone facilities in an emergency.

16. **Telegraph.** Some circuit reservations for teletype service have been arranged with the Department of National Defence. These special circuits will connect A.C.D.H.Q. to the four Zone Headquarters and will also provide an alternative wire line link into British Columbia, via Fort St. John. A separate teletype circuit is reserved for communications with the State of Montana C.D. Headquarters.

17. **Radio.** Provision has been made for the back-up of the most essential wire lines by radio. Within each Civil Defence Zone, a radio network will tie the major municipalities and C.D. Units to the Zone Headquarters. Four radio systems have been organized to serve the Peace River Zone (Grande-Prairie-Peace River area), the Northern Zone (Edmonton area), the Central Zone (Calgary area) and the Southern Zone (Lethbridge-Medicine Hat area). The four networks are based on radio amateur stations, supplemented by some municipal C.D. radio stations which are manned by C.D. volunteers holding appropriate radio licenses. In all four zones, radio network practices are held every week-end. Special radio equipment and emergency power plants, procured under the Financial Assistance Programme, have been issued to key stations on the zone networks.

18. At the level of the Provincial C.D. Headquarters, operational control over the C.D. organization will be maintained by means of a command network to the four Zone Headquarters. For government communications in an emergency, the Mobile Communications Centre of the Provincial Headquarters will

be able to cover the province by tying in with the extensive radio systems of the Department of Lands and Forests, Canadian Utilities Limited and the AGT Mobile Radio Telephone Service.

19. **ACDHQ Mobile Communications Centre.** The Mobile Communications Centre, consisting of a control van and four satellite vehicles, was field tested in April, 1959, and a technical briefing on its equipment was conducted by the contracting firm in September, 1959. (Details of these two operations are given in Part Three of this report, under "Civil Defence Exercises".)

20. In July, 1959, an Equipment Technician joined the ACDHQ Staff and assumed responsibility for the regular maintenance of wire line and radio equipment contained in the Mobile Communications Centre.

21. A vehicle storage building at Lambton Park is nearing completion. It will accommodate the communications vehicles, rescue trucks and one or more fire pumpers. There is also space for a limited workshop.

Federal Organization

22. By PC 1959-656—Civil Defence Order 1959—the Federal Government made a re-allocation of civil defence and emergency measures responsibilities at the federal level. These changes became effective on 1st September, 1959, (see Appendix "B" for copy of PC 1959-656 which details these responsibilities).

23. The Government of Canada has issued a statement on policy concerning evacuation and shelters for Civil Defence purposes. Evacuation is now "voluntary" but arrangements regarding traffic control, reception etc., will still have to be made. The shelters proposed are for protection against radioactive fallout. This statement is attached as Appendix "C".

PART TWO: TRAINING

24. **Canadian Civil Defence College.** Between October, 1950, and December, 1959, Alberta has sent a total of 1,252 candidates to the Canadian Civil Defence College, with travelling expenses being paid by the Federal Government. (See Appendix "D", Paragraph 2, for details.)

25. **Alberta Civil Defence School.** Since September, 1951, when the Alberta Civil Defence School was inaugurated, 4,252 candidates from Alberta municipalities have been trained at the school in various aspects of Civil Defence work. (See Appendix "D", Paragraph 4 for details.)

26. **Alberta Civil Defence Extension School.** During 1959 the Extension School has conducted courses in Civil Defence at Drumheller, Fort Macleod, Camrose, Red Deer, Claresholm, Cardston, Peace River, Fairview, Athabasca and Ryley. (See Appendix "D" Paragraph 6 for details.)

27. **U.K. Civil Defence Staff College.** Four (4) candidates from Alberta have attended the U.K. Staff College at Federal expense. However, no candidates attended in the year 1959.

28. **U.S. Federal Civil Defence College.** Fourteen (14) candidates from Alberta have attended United States Federal Civil De-

fence Staff Courses at Olney, Maryland, and Battle Creek, Michigan—for the most part at Federal expense.

29. **Nurses Twelve-Hour ABC Course.** The twelve-hour course of training for Alberta nurses in aspects of atomic, biological and chemical warfare has now been incorporated into the basic curriculum of nine Schools of Nursing throughout the Province.

30. **St. John Ambulance Training**
    (a) **Regular First Aid Course.** In 1959, 5,665 candidates took this course, bringing the total who have taken it since 1st January, 1949 to 54,356 persons.
    (b) **Civil Defence Basic First Aid Course.** Since January, 1952 (when this course began) 1,196 persons have taken the course. This course is no longer given, as ACDHQ prefers that Civil Defence volunteers qualify in the Advanced First Aid course.
    (c) **Civil Defence Advanced First Aid Course.** In 1959, 446 candidates took this course, bringing the total number who have taken it since January, 1952 (when this course began) to 1,988.
    (d) **Civil Defence Home Nursing.** This type of training was first introduced into Civil Defence in 1957. In 1959, 432 candidates took this course, bringing the total number who have taken it since the course was first commenced to 730.

Civil Defence Fire Pumpers

31. The five (5) Civil Defence fire pumpers allotted to Alberta in 1953 by the Federal Government are used to the fullest practical extent during the summer months to train Civil Defence and Regular Firemen throughout Alberta. During the winter months, when it is impossible to do out-door training, it is the policy to allocate the pumpers—on a temporary loan basis—to selected municipalities, based chiefly on their progress in Civil Defence, their location in the province, and their ability to use and care for the equipment.

32. **Training of Civil Defence Auxiliary Firemen.** The fire pumpers were used during the summer months of 1959 to train the following:

    70 Auxiliary Firemen, and
    13 Regular Volunteer Firemen.

    The total number of persons trained to date is 1,916 Auxiliary Firemen, plus 2,307 Regular Firemen—a grand total of 4,223.

PART THREE: OPERATIONS

Warning System

33. **Radar.** There are three "radar fences" to facilitate the early detection of enemy planes approaching North America from the North, also from the East and West seas flanking the continent:
    (a) **DEW Line (Distant Early Warning).** Runs roughly along the 70th parallel. It is a U.S.A. project begun in 1954 and completed in 1957. The DEW Line is part of a continental defence belt extending from Hawaii in the Pacific, over Alaska, Canada, Greenland and Iceland to the Azores in the Atlantic.

(b) **Mid-Canada Line (McGill Fence).** Approximately along the 55th parallel. Wholly Canadian and using automatic stations. Construction began in 1953 and is now completed.

(c) **Pine Tree line.** This line stretches along the 50th parallel, more or less, north of the U.S.A./Canada border. It is a joint U.S.A./Canada project and is fully manned round the clock.

34. These three "radar fences" are extended seawards on both the east and west coasts of the continent by radar-equipped picket ships and patrol aircraft, and also by "Texas Towers" erected on the Atlantic Continental Shelf.

35. **Ground Observers Corps.** The Corps is comprised of civilian volunteers and is operated on a 24-hour basis and controlled by the RCAF for the purpose of spotting and reporting aircraft. Personnel of the Corps are located throughout Northern Alberta and in the North West Territories to supplement radar, particularly in the event of low altitude air attacks. Provincial Forestry Officers have undergone Civil Defence training and with their shortwave wireless equipment are an integral part of the Ground Observer Corps. Cost of the Corps is borne by the Federal Government.

36. **Public Warning.** Under Civil Defence Order 1959 the Department of National Defence was given full responsibility for the warning system including the passing of warnings to the public.

37. With the co-operation of the Alberta Government Telephones, Civil Defence warnings can be passed to all Municipalities in Alberta in approximately 12 minutes, with the larger centres receiving the warning in from 30 seconds to 2 minutes from the time it is received by the A.G.T. Chief Operator in Edmonton. This system was organized by A.G.T. and Alberta Civil Defence and was first tested in March 1955. The system now includes 384 A.G.T. offices in Alberta.

38. **Sirens.** The cities of Edmonton, Calgary, Lethbridge and Red Deer have been supplied with sirens at Federal expense. The costs of installation, maintenance and telephone line rental were orginally shared jointly by the Municipal, Provincial and Federal authorities. Effective 1st January, 1957, the Federal Government absorbed all charges and then, again in accordance with Civil Defence Order 1959, the Department of National Defence from 1st September, 1959, assumed the responsibility for sirens under the overall warning system.

Civil Defence Exercises

39. To date, thirty-one Civil Defence exercises have been staged in Alberta since Civil Defence was organized in November, 1950. Costs, for the most part, were shared on a Federal/Provincial Matching Funds basis. Seven exercises were held in 1959 and are shown in Appendix "E".

Civil Defence Demonstrations

40. To date, twenty-six Civil Defence demonstrations have been staged in Alberta municipalities since March, 1954. Costs were borne on a Federal/Provincial Matching Funds basis.

Five demonstrations were held in 1959 and are listed in Appendix "E".

Hospital Disaster Institutes

41. Nineteen Alberta hospitals have prepared disaster plans. As at 31st December, 1959, thirteen hospitals have held Disaster Institutes, (i.e. actual tests of disaster plans). Six have plans completed but require to be exercised and sixty-two hospitals are presently working on plans. Costs, for the most part, were on a Federal/Provincial Matching Funds basis.

Conferences and Exercises

42. In the past years, Alberta Civil Defence personnel have attended several conferences and exercises in Canada and the United States of America. (Details of attendance at conferences and exercises in Canada and the U.S.A. are given in Appendix "E".)

PART FOUR: COSTS

43. During the 1959/60 fiscal year, an announcement was made by the Federal Government which inferred that 75% of the cost of all approved Civil Defence expenditures would be borne by the Federal Government. Unfortunately, the announcement was predicated upon the incorrect assumption that in previous years the Federal Authorities had contributed 50% to all approved Civil Defence expenditures. In Alberta, the refunds from the Federal Government have not exceeded 33 1/3% of the expenditures made by the Province and municipalities. It is proper to assume that as necessary development and expansion of the Civil Defence programme continues in Alberta municipalities, additional funds will be required from the Federal Government if an equitable sharing of expenditures is to be maintained.

44. Alberta's recommendation in this regard in former years had been that Federal contributions to approved Civil Defence expenditures should be up to 40 cents per capita, and not on the existing Federal basis of 13 cents as in former years, and 19.5 cents for 1959/60.

45. Major emphasis was placed on this point of view by the Alberta Minister responsible for Civil Defence at a conference of Federal and Provincial Ministers held in Ottawa in October 1959. An Alberta Brief to this effect was presented by the Honourable Mr. Halmrast. It was favourably received by the Federal and Provincial Ministers held in Ottawa in October mendations made were given sympathetic consideration. It is now hoped that an adjustment will be made for the 1959/60 year.

46. Alberta Civil Defence costs to the end of the fiscal year 1958/59, as apportioned between the Federal, Provincial and Municipal Governments, are as follows:

	Federal	Provincial	Municipal	TOTAL
Total Expenditures from 1950/51 to end of fiscal year 1957/58	$ 743,887.80	$ 962,447.58	$ 93,039.32	$1,799,374.70
Actual Expenditures in fiscal year 1958/59	126,140.85	389,686.34	45,971.42	561,798.61
Grand Total	$ 870,028.65	$1,352,133.92	$ 139,010.74	$2,361,173.31

NOTE: Municipal amounts shown are only those shared under the Financial Assistance Programme. Therefore, in many instances, municipal expenses for Civil Defence are actually in excess of the figures shown.

47. In summary, therefore, the actual overall Civil Defence costs in Alberta from 8th November, 1950 to 31st March, 1959 were as follows:

(a) Federal	$ 870,028.65
(b) Provincial	1,352,133.92
(c) Municipal	139,010.74
Total	$2,361,173.31

Estimated Costs 1959/60

48.

Budget Estimates 1959/60	$ 437,120.00
Matching Refund from Federal Government	219,200.00
Net Estimated Cost to Alberta 1959/60	$ 217,920.00

NOTE: The estimated cost to Alberta will be increased, as a proportion of the refunds from the Federal Government will be paid to municipalities. It is currently estimated that $80,000.00 will be paid from Alberta Civil Defence funds to the municipalities, with a like amount from the Federal Government funds.

ACDHQ
Edmonton,
31st December, 1959.

APPENDIX "A"
to Alberta Civil Defence Report
1st Jan.-31st Dec., 1959.

ORGANIZATION DETAILS

1. Municipal Organization

(a) The first steps in the establishment of a municipal Civil Defence organization are the passing of a Civil Defence By-Law and the appointment of a Control Committee, and a Director of Civil Defence. As the organization expands, chiefs of various Civil Defence Services, such as Health, Welfare, Police, Fire, etc., are selected and voluntary workers are recruited.

(b) Municipalities now organized or in the process of organizing for Civil Defence are:

(i) Cities	9
(ii) Towns	67
(iii) Villages	61
(iv) Municipal Districts	23
(v) Counties	10
Total	170

2. **Visits to Municipalities and Civil Defence Inspections.** Visits by provincial Civil Defence officials and members of full-time staffs maintain liaison between Alberta Civil Defence Headquarters and the various municipalities. During the year 1959, staff officers from Provincial headquarters made 527 visits of inspection throughout the Province.

ACDHQ
Edmonton,
31st December, 1959.

APPENDIX "B"
to Alberta Civil Defence Report
1st Jan.-31st Dec., 1959.

P.C 1959-656

AT THE GOVERNMENT HOUSE AT OTTAWA
THURSDAY, the 28th day of MAY, 1959

PRESENT:

HIS EXCELLENCY
THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Right Honourable John George Diefenbaker, the Prime Minister, pursuant to the Public Service Rearrangement and Transfer of Duties Act, is pleased hereby, effective September 1, 1959, to revoke Order in Council P.C. 985 of 23rd February, 1951 which transferred all powers, duties and functions relating to Civil Defence from the Minister of National Defence to the Department of National Health and Welfare, and to make the annexed Civil Defence Order, 1959.

Certified to be a true copy
R. B. Bryce
Clerk of the Privy Council

ORDER

1. This Order may be cited as the Civil Defence Order, 1959.

2. In this Order, the expression "civil defence powers, duties and functions" includes powers, duties and functions relating to the matter of "preparation for civil defence against enemy action" mentioned in section 4 of the National Defence Act.

3. The Minister of National Defence shall have and exercise the following civil defence powers, duties and functions:
   (a) provision of technical facilities and operation of a system to give warning to the public of the likelihood and imminence of an attack;
   (b) determining the location of a nuclear explosion and the patterns of fallout, and giving the necessary warning of fallout to the public;
   (c) assessment of damage and casualties from attack and fallout;
   (d) controlling, directing and carrying out re-entry into areas damaged by a nuclear explosion or contaminated by serious radioactive fallout, decontamination work in those areas, and the rescue and provision of first aid to those trapped or injured;
   (e) direction of police and fire services in seriously damaged or contaminated areas which are the object of re-entry operations, including the control of traffic and movement of people in those areas;
   (f) direction of municipal and other services for the maintenance and repair of water and sewer systems in seriously damaged or contaminated areas;

(g) provision of emergency support to provincial and municipal authorities in the maintenance of law and order and in dealing with panic or the breakdown of civilian authority, and

(h) maintenance and operation of emergency communication facilities.

4. The Minister of National Health and Welfare shall have and exercise the following civil defence powers, duties and functions:

   (a) assistance to provincial and municipal governments and to others in connection with the organization, preparation and operation of:

      (1) medical, nursing, hospital and public health services, and

      (2) services to provide emergency accommodation, emergency feeding, emergency supplies, guidance and welfare assistance for persons who have lost or left their homes because of acts of war or apprehended acts of war; and

   (b) maintenance and operation of the Civil Defence School at Arnprior, Ontario.

5. The Minister of Justice shall have, and through the Royal Canadian Mounted Police, shall exercise the civil defence power, duty and function to assist provincial governments and municipalities and their police forces, except as provided in section 3 above, in

   (a) maintaining law and order; and

   (b) controlling and directing traffic in connection with civil defence exercises and operations.

6. The Prime Minister shall have and, through the Emergency Measures Organization, shall exercise the following civil defence powers, duties and functions:

   (a) the co-ordination of civil defence planning by departments and agencies of the Government of Canada;

   (b) the preparation of civil defence plans in relation to matters that are not the responsibility of any other departments or agency of the Government of Canada;

   (c) assistance to provincial governments and municipalities in respect of preparation for civil defence where assistance is not the responsibility of any other department or agency of the Government of Canada; and

   (d) general liaison with other countries, with the North Atlantic Treaty Organization and with provincial governments on matters relating to civil defence.

7. Where any matter of sections 3, 4, 5 or 6 would, but for this Order, be a power, duty or function of a Minister other than the one referred to therein, that power, duty or function is hereby transferred to the Minister referred to in the section in which that matter is mentioned.

8. This Order does not have the effect of transferring the control or supervision of any members of the public service from one Minister of the Crown to any other Minister of the Crown, or

from one department or portion of the public service to any other department or portion of the public service.

ACDHQ
Edmonton,
31st December, 1959.

APPENDIX "C"
to Alberta Civil Defence Report
1st Jan.-31st Dec., 1959.

STATEMENT BY THE GOVERNMENT OF CANADA ON POLICY CONCERNING EVACUATION AND SHELTERS FOR CIVIL DEFENCE PURPOSES

Should a war occur, attacks on Canada by large nuclear weapons would be expected. Major Canadian cities might be selected as targets, although what priority cities would receive in comparison with other targets is conjectural at best. Furthermore, there would be an equally serious risk from attacking bombers being shot down over Canada with their bombs set to explode, or from missiles going astray from their targets.

Additional to the damage done in this way, there would be a widespread danger from radioactive fallout which would render it unsafe to be in some areas without substantial protection, or to be out-of-doors for more than very brief periods.

Although it is expected that in times of anticipated peril, many people will wish to leave the cities which are considered to be the more likely targets to take refuge in other less dangerous parts of the country, the Government considers that Canadians should not be compulsorily required to leave their homes for the result might well be that in avoiding one danger other risks would thereby be incurred.

At the same time we believe that proper provision should be made so that people desiring to leave the more likely target areas can do so, excepting of course that persons in certain classes of occupations must be asked to remain at their posts to safeguard essential utilities and services.

It is generally expected that in the event of attacks by bombers there would be sufficient warning time to allow many people to leave, if efficient traffic arrangements are planned in advance. On the other hand, when missiles are used, warning time will be reduced to a few minutes.

While as stated the Government does not propose to adopt a policy of compulsory evacuation of target areas on the outbreak of war, preparations should be made to enable those who wish to move to do so in an orderly manner so as to avoid confusion and keep panic to a minimum.

While shelters would be of considerable help in saving lives, to achieve a substantial amount of protection against a nuclear explosion itself would require a type of shelter that would be very costly. The Government is studying what might be achieved by anti-blast shelters in target areas, their cost, and how that cost might fairly be distributed. Complete protection cannot be achieved at any cost close to the explosion itself, as anti-blast shelters could not possibly be built in every area where a bomb or missile might fall. The Government does not intend to reach a decision to build this type of shelter which in any event would provide a limited degree of protection until it is possible to assess its usefulness and cost.

It seems clear that substantial protection from radioactive fallout can be secured by individual households at reasonable cost. Relatively simple family refuges or shelters can be built in the basements of existing buildings for two or three hundred dollars. The Government will at an early date publish a pamphlet giving detailed suggestions for those wishing to provide this kind of protection for their families. Somewhat more costly backyard shelters can be built in homes without basements, but further study is required before a suitable type can be recommended to the public.

The provision of shelters against fallout for larger than family groups appears to be desirable and to this end the Dominion Government has proposed that the federal, provincial and municipal authorities jointly carry out surveys of existing large buildings to ascertain what protection they could afford.

While the foregoing represents its views, the Government intends to keep these problems under constant examination and to revise plans in this field from time to time as circumstances and events may make necessary.

November 19, 1959.
ACDHQ
Edmonton,
31st December, 1959.

APPENDIX "D"
to Alberta Civil Defence Report
1st Jan.-31st Dec., 1959.

TRAINING DETAIL

Federal Civil Defence School

1. Since the inauguration of Civil Defence in Alberta, candidates from the Province have been selected every year for training in various aspects of Civil Defence at the Canadian Civil Defence College. Costs incurred in such training are borne wholly by the Federal Government. A limited number of Senior Civil Defence Officers have also had training at the United Kingdom Civil Defence Staff College, Sunningdale, England, and the United States FCDA Staff College.
2. Following is a table of courses held at the Canadian Civil Defence College, which includes mention of the United Kingdom and the U.S. Staff Colleges. The table also shows the number of Alberta candidates trained at these courses.

Type of Course	Number of Courses 1959	Number of Courses Total to Date	Personnel Trained 1959	Personnel Trained Total to Date
Staff "Orientation"	6	33	8	71
Staff "Planning"	2	9	10	44
Staff "Operations"	3	11	12	39
ABC Warfare	Nil	12	Nil	19
ABC Medical	Nil	3	Nil	22
Welfare, General	Nil	18	Nil	66
Welfare, Emergency Feeding	2	10	10	52
Welfare, Emergency Lodging	1	5	4	19
Welfare, Emergency Clothing	1	5	4	16
Welfare, Registration and Inquiry	2	12	11	61
Welfare, Personal Services	1	4	4	14
Welfare, Instructors	Nil	1	Nil	7
Senior Wardens	Nil	7	Nil	26
Rescue Instructors, Part A	5	30	7	54
Rescue Instructors, Part B	5	31	7	57
Rescue Instructors, Part C	5	17	5	36
Tactical Fire Study Forum	Nil	3	Nil	17
Fire Orientation	Nil	1	Nil	4
Radiological Defence	5	19	15	61
Fire and Police Radiation Monitoring	3	4	11	14
Tactical Study Forum	Nil	4	Nil	15
Transportation Forum	Nil	1	Nil	2
Traffic Engineer Forum	1	1	3	3
Industry Forum	Nil	2	Nil	9
Engineers Forum	1	5	2	16
Agrologists Forum	1	1	3	3
Women's Course	Nil	1	Nil	11
Communications	2	12	12	66
Disaster Study Forum	Nil	3	Nil	13
Nurse Educator and Specialist	1	8	5	37
Casualty Simulation	Nil	7	Nil	23
Casualty Simulation Instructors	Nil	4	Nil	15
Physicians and Dentists Indoctrination	1	7	3	48
Pharmacists Indoctrination	Nil	7	Nil	40
Health Services Conferences	1	2	6	13
Conf. of St. John Ambulance Instrs.	Nil	1	Nil	11
Veterinarian Indoctrination	Nil	1	Nil	3
Newsman's C.D. Conference	Nil	2	Nil	22
Pilot Police Forum	Nil	3	Nil	9
Shelter Course	Nil	1	Nil	4
General Instructor	Nil	16	Nil	37
C.D. Officers Instructors	Nil	4	Nil	9
Educational Forum	Nil	1	Nil	6
OCDM Staff College (USA)	Nil	10	Nil	14
U.K. Staff College	Nil	4	Nil	4
Provincial C.D. Co-ordinators Conference	1	6	2	51
Training Officers Conference	Nil	3	Nil	16
Directing Staff Conference	1	3	14	40
Civil Air Patrol Forum	Nil	1	Nil	1
Welfare, Directors Conference	1	1	1	1
Clergy Conference	Nil	7	Nil	7
Conference, Mayors and Reeves	Nil	1	Nil	3
C.D. Working Party	Nil	1	Nil	1
Totals	52	366	159	1,252

Alberta Civil Defence School

3. Provincial Civil Defence training began in September, 1951. From that date onwards the Alberta Civil Defence School has provided various courses of training for selected candidates from the province.

4. The table below lists the courses held at the Alberta Civil Defence School and gives the total number of candidates trained to date:

Type of Course	Number of Courses 1959	Number of Courses Total to Date	Personnel Trained 1959	Personnel Trained Total to Date
General Instructors	Nil	9	Nil	240
Nurses' A.B.C.	Nil	1	Nil	90
Fire Instructors	Nil	12	Nil	282
Summer School for Teachers	1	8	178	962
Rescue Instructors	3	16	88	347
Orientation	5	26	167	665
Welfare	3	15	85	479
Government Inspectors	Nil	1	Nil	36
Alberta Forest Rangers	Nil	2	Nil	133
Pharmacists	Nil	1	Nil	6
Orientation, Agriculturists	Nil	2	Nil	199
Orientation, Nurses	1	3	33	98
Radiation Monitoring	1	14	16	295
Traffic Control Forum	Nil	1	Nil	33
Control Room Procedures	6	10	218	387
Totals	20	121	785	4,252

5. Military personnel have taken advantage of these courses and candidates have attended from regular and militia units of Western Command Canadian Army; also from Royal Canadian Air Force stations in Alberta. All Rescue Instructor courses conducted this year have been for the benefit of the Canadian Army, Western Command. In addition, the Canadian Army has made use of the facilities of the Alberta Rescue School and conducted training as follows:

	Courses	Candidates
1	Three-day Basic Rescue	18
2	Five-day Basic Rescue	60
4	One-day Rescue Orientation demonstrations	250
7	Totals	328

Alberta Extension Schools

6. The following table shows the number of candidates trained in Extension Schools—Alberta:

Type of Course	Number of Courses 1959	Number of Courses Total to Date	Personnel Trained 1959	Personnel Trained Total to Date
Orientation	9	14	367	538
Casualty Simulation	Nil	1	Nil	11
Radiation Monitoring	Nil	5	Nil	150
Rescue	1	2	14	47
Totals	10	22	381	746

ACDHQ
Edmonton,
31st December, 1959.

APPENDIX "E"
to Alberta Civil Defence Report
1st Jan.-31st Dec., 1959.

OPERATIONAL ITEMS

1. **Civil Defence Exercises.** Since the inauguration of Civil Defence in Alberta in November, 1950, thirty-one exercises have been staged in the Province, mainly on a Federal/Provincial Matching Funds basis. Of this number the undermentioned were carried out during 1959:

   (a) **Exercise "Pronto II"**—on 8/9 April. This exercise was held in the Camrose area and set up to carry out field tests of the Alberta Civil Defence Communications vehicles and equipment.

(b) **Exercise "Co-operation III"**—on 24/25 April. This was a national exercise.

(c) **Disaster Exercise**—on 27 May. This was held at the Mineral Springs Hospital, Banff.

(d) **Disaster Exercise**—on 10 June. This was held at St. Joseph's Hospital, Barrhead.

(e) **Exercise "Technical Training I"**—on 25/26 September. This was held at Alberta Civil Defence Headquarters and representatives of major Communications Agencies attended. A briefing was conducted by Canadian Electronics Co., Ltd. on the Alberta Civil Defence Communications equipment; also, the equipment was exercised by the attending representatives.

(f) **Exercise "Crash I"**—on 24 October. This was held in Lethbridge and simulated a bush crash which exercised all Civil Defence services and the Municipal Hospital.

(g) **Exercise "Big Shock"**—on 5 November. This was held in the Peace River Zone and exercised all Civil Defence organizations in the County of Grande Prairie. The exercise evolved from a simulated earthquake under adverse weather conditions.

2. **Civil Defence Demonstrations.** Between March 1954 and 31st December, 1959, twenty-six Civil Defence Demonstrations have been organized, the cost being borne mainly on a Federal/Provincial Matching Funds basis. Five demonstrations were held in 1959, as follows:

(a) **City of Calgary**—on 17 June. Rescue demonstration for Western Command Unit, Canadian Army.

(b) **City of Lethbridge Exhibition**—22/25 July. Rescue and Communications.

(c) **University of Alberta**—on 28 July. Alberta Civil Defence Communications mobile equipment.

(d) **City of Lethbridge Air Show**—on 7 August. Rescue and Communications.

(e) **City of Lethbridge**—on 16/17 December. Concrete lance boring.

3. **Conferences**

(a) **Federal Conferences—at Federal Expense.** Up to the end of 1959, representatives from Alberta attended twenty-six Federal Conferences. Of this number, five as specified hereunder were held during 1959:

(i) Directing Staff Conference—for Exercise "Co-operation III" 9/13 February.
(ii) Welfare Directors Conference, 22/24 June.
(iii) Federal/Provincial C.D. Advisory Committee Conference 2 October.
(iv) Conference of Provincial Co-ordinators 5/6 October.
(v) Health Services Conference 16/20 November.

(b) **U.S.A. Conferences—at Federal Expense.** Up to the end of 1959, representatives from Alberta attended fourteen FCDA Conferences held in the U.S.A.

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